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INDEX.

	PAGE.
Allen's Am. Herd Book. Notice of	24, 53
Agriculturist Almanac, 1855,	32
Agricultural Report, premiums for	23
Apple Orchards. cost and profit	48
Architecture. Rural (Engraving)	87
Am. Agricultural Implements, Report on, by Wm. McDougall, Esq.	99
Agricultural Societies, Rights of	213, 270
Apple Borer. The	401
Apple Trees, Vigorous	228
Ardent Spirits, Influence of	250
Agriculture in Canada and U. States	235
Atlantic Ocean. Basin of	281
Agricultural Meeting at Carlisle	294
Animal Sagacity	313
Agricultural Association, Show of	321
Agricultural Books in Schools	348
Aluminum	371
An Amiable Gobbler	369
An Important Discovery	370
Board of Agriculture	9
Buckland, Prof.. Report	11
British Agriculture, Mr. Hutton's Report on	15, 50. 70
Birmingham Cattle Show	43
Bricks, unburnt for houses	53
Brass, to clean	76
"Balco" Notice of, and Potrait	100
"Bloom," do do	100
Bureau of Agriculture, Documents from	125
"Birthday," notice of and Portrait	143
Berkshires, Col. Morris' stock	143
Burned Shoes, how to treat	185
Bees, to transfer	187
Barbadoes, Tar	187
Bones, To prepare	211
Brush, Machine for chopping	218
Brodie, Jno., Notice of	228
Bramah Fowls, (Cut)	242
Bees, Remarks on	280, 249
Beverages we infuse, The	249
Butter Re-churning	250
" Rules, for making	301
Botts, Remedy for	258
Beauty, How obtained &c.	263
Butter worker (cut)	267
Birds and Insects	286
Beet sugar	290
Butter, Proportion of to milk	299
Breaking Steers	299
Canada Farmer, Notice of	24
Caledon Township, Fall Show	23
Canada, Hutton's Guide to	28
Cattle, first in America	21
Canada, English notions of	26
Coal at Quebec	60
Coffee, clear	92
Canada West, farming in	68
Common Schools, Agriculture in	70
Calves, New method of raising	72
" Feeding	180
Cement, Invisible	124
Cattle, Roots for fattening	137
Clover seed, mode of sowing	149
Corn-carrying in Russia	157
Crimea, the climate of	158
Contracted feet	180
Croup, cures for	188
Children, curiosity of	108
Canada at Paris Exposition	349
Chemistry, Useful assistance of	272, 307
Crimea, Loss of life in the	279
Cisterns, To determine capacity of	284
Cast Iron, Effect of repeated melting	284
Carlisle, Show of stock at	297
Crops in New York	298
Currants, London	306
Cucumber seed, To clean	307
Clouds	313
Chinese and English fashions	314
Cobourg Exhibition, Account of	322
" " Prizes awarded at	330
Christie, D.,Esq.,M.P.P.,Address at Cobourg	323
Cucumbers, To sow	210
Calves, rearing	219
Climate of America	220
Cashmere Wool	200
Cotswold Sheep	198
Corn, Hilling unnecessary	202
Cheese making	203
" Preservation of	259
Cultivators (Cuts of)	203
Clover Seed, Grow your own	229
Cheese, from a few Cows	233
Crops, Notice of	243, 244
Cisterns, To build	246
Canada Thistles, To destroy	263
Cabbages for Cows	374
Canadian Settler's Guide	374
Canada; Physical, Economical, and Social	374
Close of Vol VII.—Reduction in Price	353
Condition of Cattle before winter	357
Cruelty to Animals	372
Cure of Diseased Potatoes	358
Durham Stock, sale of	34
Dairy Buildings, plan of	25
Draining, Mr. Marks on	19
Draining Plough, new Steam	12

PAGE.

Drains, depth of &c. - - - - - - 57, 175
Days without night - - - - - - 90
Domestic Economy :
Receipts, &c. - - - - - - 92, 93
Drain Tile Machines in U. S. - - - - 103
Ditching Machines - - - - - - 133
Drainage Company, Notice of - - - - 212
" Act to establish - - - - 231
Delafield Jno. Esq. Notice of his farm - - 240
Devon Herd Book - - - - - - 251
Disinfectant, A Cheap - - - - - 282
Drains, Roots of Trees in - - - - - 285
Death of Wm. Matthew, Esq., - - - - 373

Experimental Farm, Toronto - - - - 20
Editor's notices, - - - 31, 94, 158, 189
Epidemics, why they rage in the night - - 91
Ether for animals - - - - - - - 91
Eggs, To toast - - - - - - - 220
Emigrants, Information for - - - - 245

Farmer's Clubs.
Guelph, Fall and Spring ploughing - - 7
York—Essay on Manures - - - - 33
Guelph—Orchards - - - - - 65
Hamilton Township—Benefit of Agricultural Societies - - - - - - 98
York—Fallowing Land - - - - 129
Guelph—Manures - - - - - 180
Files, how they are made - - - - 28
Foot rot in sheep - - - - - - 47
Fruits and Fruit culture - - - - - 47
Farmer's Home, The - - - - - - 69
Farm Economy - - - - - - - 74
Fruits, Catalogue of valuable - - - - 75
Flax Machines in U. States - - - - 102
Family Jars - - - - - - - 120
Fall and Spring Ploughing - - - - 7
Flower Pots for rooms - - - - - 124
Fallowing Land - - - - - - 129
Flax and Hemp, Cultivation of - - - 138
Fergusson, Hon. A. On Canadian improvement - 215
Farmers, Duties of to family - - - - 217
Fish for food - - - - - - - 246
Farming, Importance of - - - - - 263
Facts for the curious - - - - - 264
France, Agriculture in - - - - - 268
Fire, to put out in clothes of women - 282
Female women - - - - - - - 285
Farming, Why unprofitable - - - - 298
Fruit Stealing, Morals of - - - - - 311
Farm machinery - - - - - - 314
Fruit, Preservation of - - - - - 315

Grains and Roots, weight of - - - - 19
Grain breakers - - - - - - 60
Gooseberries, Culture of - - - - - 76
Geology of Canada - - - - - 87
Gardening—Hints for April - - - - 121
" Mr. Flemings hints for - - - 150
Guano, Adulteration of - - - - - 136
Grass Seed for an acre - - - - - 148
Gas, Cooking by - - - - - - 186
Governor General, Dinner to - - - - 328
Gas Tar and insects - - - - - - 306
Gardeners, Hints to - - - - - - 306
Green Crops, Effects of - - - - - 299
Grown wheat, Bread from - - - - 292
Grape Vine, Plant a - - - - - - 208
Guano, Great fraud in - - - - - 195
" Home made - - - - - 221
Grecian Farmers - - - - - - 230

PAGE.

Grindstones - - - - - - - - 233
Grain Drill (cut) - - - - - - - 234
Grafting and Budding - - - - - - 239
Geological features of Canada - - - - 261
Grains, Standard weight of - - - - 265
Green food - - - - - - - - 266
Germany, Agriculture in - - - - - 290
Ground Oats - - - - - - - - 356

Hop growing in the United States - - - 49
Honey, How to make much - - - - 54
Hair, Wash for the - - - - - - 77
Harland, John, Esq, Testimonial to - - - 119
Hotels, English and American - - - 157
Horse Hoe (cut) - - - - - - - 182
Hessian Fly, The - - - - - - - 196
" " and the Midge - - - - 265
Hayfields, The - - - - - - - - 200
Haymakes, The (Cut) - - - - - - 201
Horse-raker (cut) - - - - - 201, 216
Hutton, Wm. On Stock farming - - - 213
Hedges, Beech for - - - - - - - 218
Horse power Hayfork (cut) - - - - - 202
Hay for cows in summer - - - - - 202
Household measures - - - - - - 248
Horse, Chest of the - - - - - - - 260
Husbandry, Markham's farewell to - - - 262
Harrow, Expanding [cut] - - - - - 267
Hydraulic Ram, The [cut] - - - - - 278
Hermetically sealed - - - - - - - 280
Housekeepers - - - - - - - - 280
Heat without fuel - - - - - - - 282
Horses, Practice of shoeing - - - - 309
Hints to Purchasers of Trees - - - - 365

Indian Muffins - - - - - - - - 221
"It can't be helped" - - - - - - 248
Indian light biscuit - - - - - - 250
Johnny Cake, To make - - - - - - 251
Insects injurious to the farmer - - - - 257
Ignorance, Cost of - - - - - - - 285
Iron, Manufactures of - - - - - - 28
Judges at Provincial Show, mode of appointing 155

Lime, Manurial uses of - - - - - 73,120
Lambs, Treatment of - - - - - - 107
Lawton Blackberry, the (with cut) - - - 123
Labor and Production - - - - - - 187
Lime water in making bread - - - - 220
Live Fences - - - - - - - - 249
Light, Electric - - - - - - - 315
Lawes, J. B. Testimonial to - - - - 317

Months The, January, 21; February, 55; March, 81; April, 112; May, 144; June, 176; July 206; Aug. 236; Sept. 268; Oct. 304; Nov. 344;
Markets - - - - - - -62, 94, 126, 189
Maple Sugar, to make - - - - - - 71
M'Dougall, W., Report to Bureau of Agriculture by - - - - - - - - - 99,133
Morris, Col. L. G., Visit to M. Fordham - - 109
Manures, different kinds of, in Flanders, - - 115
Mulching Trees, Tan for - - - - - - 122
Millet, Culture of - - - - - - 149,204
Melons, Boxes for - - - - - - - 157
Manures, Discussion on - - - - - - 130
"Monarch," Description of, and portrait - - 178
Mowing Machines (cut) - - - - - - 181
Merino Sheep - - - - - - - - 199
Manure, How much to the Acre? - - - 205
McDougall, W., Remarks by on Agricultural Act - - - - - - - - 213, 271
Mice, to prevent girdling trees - - - 219

	PAGE.
Mowing Machines, Trial of	225
" " vs. scythes	251
Maxims for young men	230
Maple sugar, to clarify	250
Michigan Double Plough	265
Milk in Paris	280
" Preservation of	281
Moon, influence of	309
Melon, Bugs, To drive away	306
" Apple, the	307
Monster guns	311
Military phrases, Explanation of	312
Milk, Holding up	343
Nitrate of Soda as Manure	17
Needles, how made	29
Noe Wheat	230
Osage Orange for Hedges	60 208 254, 239,
Onions, Nutriment of	247
Ox, How to move a sullen	282
Orthography, Changes in	311
Orchard work in Spring	65,122
Oil of Indian Corn	177
On the Choice of Brood Mares	355
Ploughing Deep	193
Potatoes and their Culture	200
Pruning fruit Trees	209
Plum pies, Dried	221
Pennywise and Pound foolish	247
Prov'l Exhibition 1855 Rules of,	226, 317, 284
" Show of	321
POETRY ;—	
The Old Cottage Clock	155
Young Farmer's reply	183
The Ploughman	265
The Milk-maid and Banker,	301
Professions, Genteel	281
Preserve, a new	282
Pancakes To make without batter	283
Paris Exhibition, Prize wheat at	286
Potatoe Rot, the	299
Paint for decayed branches	370
Pusey, Philip. death of	317
Prize List, Prov. Show	330
Paris Exhibition	24,84
Pear Tree, Shaker specific for	48
Pruning Trees, Hints for	48,77
Plums in Wisconsin	48
Premium Orchards	49
Piggery, plan of a	58
Plain Hints from a young farmer	69
Plowing, Modes of	72
Plants, Analysis and uses of	80
Printing, Value of	124
Patent saws, Changes recommended	135
Potatoe, Cultivation of	175
" Forty varieties	182
Plough, Double Mould Board	182
Patents for inventions in England	369
Popular Errors	364
Prices and Wages in England	360
Prospects of the Grain Market	359
Quinces, How to cultivate	48
Receipts, useful	316, 315, 219, 283, 243
Rain, Philosophy of	220
Reaping Machines	227
" " Trial at Paris	347
Railway, Endless	284
Royal Agricultural Society of England, Carlisle Show	294
Railroad cake	307
Russians, Way they treat their horses	312
Railway, a monster	317
Roofing Houses, new material for,	88
Rose, uses of the	91
RECIPES,	92,93,
Roots preparing for stock	122
Steam power superceded	14
Steam plough, History of	14
" " Difficulties of the	108
Swedish Turnips, dressing for	18
Smithfield Show	40
Sheep, experiments in feeding	46
Sheep, cutting roots for	47
Straw for food	73
Soils, analysis of	86
School room, Stove pipe in	88
Sheep Husbandry, Best authors on	105
South Down, Description of the	105
Salt for animals, benefit of	118
Scrofula, Remedy for	124
Short Horn Stock, Mr. Stone's	125
Seed Sowers [cut]	146
Sheep, new Leicesters	146
Strawberry, culture of	152,183
Seed, quantity of different kinds to the acre	153
" weight of per bushel	155
Silesian Sheep	177
Short Horn Cattle merits of	205
Seeds, To make foreign grow	210
Science, What it can do	221
Soap, To make cheap	248
Stock, Loss of, in Ohio	249
Sandy Soils, Compost for	234
" " Clay for	259
Sink, Wash from	236
Stilton Cheese, How made	275
Strawberry Culture, A fact in	276
Seeds, Raising	276
Saws, Management of circular	277
Steamer, A great	279
"Sit upright"	280
Steam Engines	281
Sight, To preserve the	281
Salt in cooking	290
Short Horns, Col. Morris'	292
Steam Ploughs and their failures	293
Silesian sheep	301
Spiders, antipathy to	313
Sulky boy, The	313
Steam Whistle, The	315
Stump Machines	345
Sausage Meat	369
Thunder Storms, distance of	54
Tree, Oldest in the world	120
Turnips, malformation of	148
Treadwell, shff. Premiums offered by	173
Tobacco, a calculation	186
Turnip seed, Selection of	194
Trees, Boiling water on	210
" Wash for	209
Type-setting by machinery	221
Tomato Preserves	247
Turnips, Taste, of in butter	250
Trees, Distance of, apart	263
" To prevent splitting	306
Turnip Fly, The	265
Tea at half price	265
Telegraph, The	278
Threshing Machine. Trial of, at Paris	293
Temperance, Effect of	314

	PAGE.
Timothy, Origin of name	343
The Months—December	362
The potato Rot	373
Turnip Crop in Great Britain	357
Turnip Sweepstakes	360
Unburnt Brick for Building	376
Vegetable Physiology, Essay on	1
Winter ploughing,	45
Wren, the. in Cherry Trees	77
Willow Plantations	156
Windows, To Wash	250
Whitewash for outhouses	251
Wellington, Stock in Co. of	227
Wire, Worm, &c,	257
Wheat, Meteriological influences,	262
Wheat Crop. and price of it	264
Warts, Cure for	280
Weeds. How to keep down	281, 290
Wasp stings To cure	282
Wheat. Injury of Rain to	301
Weights and measures	302
Winds, Theory of	310
Young Men, Advice to	314

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OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VII. TORONTO, JANUARY, 1855. No. 1.

Agriculture, &c.

TOWNSHIP OF YORK FARMERS' CLUB.

VEGETABLE PHYSIOLOGY.

The following well-written essay was read before the York Township Farmers' Club, by Robert Davis, Esq. The Club is fortunate in being able to number among its members a gentleman of so much intelligence as the author of this essay:—

It is not necessary for me to remark how limited is still the knowledge acquired by the most learned in regard to agricultural chemistry; it is enough for us, as farmers, to know that while others are devoting much time, energy, and skilful research, with little or no pecuniary profit as a stimulus, we, whose business and interest should have prompted enquiry, have been content to remain utterly indifferent to the midnight darkness that envelopes every operation of our calling. The fact may be, perhaps really is, that the chemist has yet done little or practically nothing for the farmer, as a tiller of the soil;—some first principles, however, have certainly been propounded,—analyses have proved constituents, and information most valuable, in a scientific view, arrived at;—but it must be admitted that, for general practical application, chemistry has hitherto placed nothing within the reach of the every-day farmer, by which his ordinary labors are lightened, nor has it reduced the uncertainty by which agricultural results are so invariably characterised. This may not be spoken, however, in disparagement of chemistry as applied to agriculture;—many sound theories are difficult of practical application;—the scientific enquirer is rarely, in this case, a practical operator; while the farmer is quite as unfrequently inquisitive or scientific;—so that the principle demonstrated in the laboratory is lost to all useful purpose by want of intelligent application in the field. Unscientific men are too prone to discredit all innovations upon long-established practices, and little short of an instantaneous miracle is necessary to convince them of the absurdity of a usage, which prejudice and custom have familiarized. However desirable, it cannot be expected, that the chemist, whose avocations leave him so little leisure, should become familiar with the details of field labor; while "au contraire," from the nature of his business, the farmer has much leisure for the acquirement of that knowledge immediately identical with his interest which chemistry is able to afford. It would seem, therefore, that, if it be essential to combine some scientific knowledge with practical skill in the culture of those products in which the farmer finds a profitable account, at his door must lie all blame for lack of those results, to which a more skilful management and improved practice would certainly contribute.

All life is a forced state, springing from those inscrutable laws of nature which a divine omnipotence has created, and controls in providential benevolence to all his creatures. Of all the grand divisions of nature, whether animal, mineral, or vegetable, the most merciful, the most beautiful, the most obvious to our every-day senses, as well as the most indispensable to the sustentation of animal life, is the earth's glorious carpet of vegetation; without which man, and all the varied family of animated nature, would perish—yea, the great globe itself would have

been but a sterile and cheerless waste; the important functions in the economy of nature, which vegetables doubtless perform, would be unfulfilled, and the very breath of heaven turned to poison. But God said, "Let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit—and it was so."—*Gen.* i.

As in the animal economy, so in the vegetable—a certain organization is requisite;—and this system of organs is required in the vegetable for purposes analogous to those performed by the organs of animals;—namely, to sustain vitality,—to nourish,—and to procreate the species. The principal organs of the vegetable structure are:—

The Seed.	Stem.	Alburnum.	Pistil.
" Corculum.	Pith.	Calyx.	Pericarp.
" Root and	Fibres.	Bark.	Corolla.
" Collett.	Liber.	Stamen.	

And these are conveniently divided into three classes,—as those of *Vitality*,—of *Nutrition*,—and of *Procreation*.

By the organ of *Vitality* we understand that particular part or member which is the germ of, and from which originally springs or emanates the future plant; and is the Corculum of the Seed, from whence proceeds all that is dependent upon the vital principle; containing in itself the elements of an organized being, awaiting only a combination of favorable circumstances to excite its latent powers. The principle of vitality, however, is not always confined to the seed,—it is frequently diffused over the stem, and branches even in the leaves, in the roots, in the crown, and in bulbs and tubes.

The retention of the principle of vitality in seeds passes all calculation, and approaches the marvellous, if not the incredible. Still, we have authenticated facts proving, beyond all question of doubt, the power of revivification after a dormant state of 2,000 or 3,000 years. Some years ago, a bulbous root was taken from the hand of an Egyptian mummy, where it had probably remained for upwards of 2,000 years; upon exposure to the air it germinated; when placed in earth it grew with great rapidity;—and the growth of wheat obtained from a similar source is notorious.

The Nutritive Organs are the roots, with their fibres and spongioles, and the glands and pores of the cuticle; through these the plant is enabled to receive either gaseous or aqueous nutrition, which, after being absorbed, is elaborated, and assimilated with the inherent qualities and characteristics of the plant, of which it becomes a part. It is easy to infer that the growth of these fibres must be somewhat commensurate, and simultaneous, with all other parts, in order to a gradual, and natural development of the whole structure; their tendency is ever to humidity, and they are for the most part averse to light, the exceptions to this being rather from location than from any other cause. The Cellular and Vascular structures of the Stems of Plants become, in their several positions, rather a means of conduction for aqueous food, than organs of nourishment; nevertheless, in either case, each particular structure strongly marks the character of organization. The Vascular having mainly a longitudinal position, appears adapted for conduction of sap lengthwise with the stem,—while in the Cellular structure fluids are able to permeate in all directions—laterally or perpendicularly. The hidden power which elevates the sap, or crude pabulum, to the seat of the equally incomprehensible assimilation, is yet to be discovered;—it has been ascribed to the action of the foliage,—to the sun's influence,—to electric currents,—to capillary attraction,—and to atmospheric pressure;—it may not be improbable that a joint influence of all these agencies may minister to the result, aided by attraction, and chemical combination. The Stem also bears the foliage and fructification.

Procreative Organs are found either in the Seed or Offsetts and layers—but these and all other modes of reproduction only tend to show that the principle of vitality is variously disposed while the true legitimacy (if the term may be used) of the plant can only be found in the seedling.

"Seeds are the oviparous progeny of plants," and it is affirmed that the future plant exists in embryo in the seed. This is somewhat speculative, perhaps, but nothing improbable, if it be admitted that the growth of a plant is but an amplification of, and not an addition to, a pre-existence; the organic structure becomes enlarged by assimilation of vegetable food—were this not so, but dependent upon the fortuitous arrangement by accretion, it would form a very striking coincidence, that any given family of plants should so invariably and for so long a time preserve its specific and peculiar character. Another view of the case, and one mostly favored by chemists, is, that, as the component parts of vegetables are wholly oxygen, hydrogen and carbon, and being endowed with power to extract

these from the earth, air, and water, their growth and development are the results of the exercise of this power. It cannot be doubted that there is much reason in this view; but whether the organized arrangements are due to these combinations alone, would appear somewhat questionable; perhaps a middle view would approach the true case,—the rudiments all being pre-existent, but dormant, requiring primarily the exciting cause, and subsequently the nourishment which these chemical agents are capable to afford.

There are other parts of the organic structure of plants which may merely be mentioned in passing—as the *collett* or *crown* of the roots; —that part which divides the stem or stalk from the roots in young plants, is almost entirely lost in the maturity of some. The *Pith* occupies the centre of the stem, and appears to be a cellular substance, spongeous, and absorbent, very permeable, having hollow, open interstices, which act as ducts, and receptacles of gas and fluids. The functions of the pith appear temporary—ultimately ceasing with the age of the plant;—in hollow stems pith is only to be found at the articulations.

The Bark—the Liber—and the Alburnum—it is not here necessary to mention further than as parts of vegetable organization; they belong chiefly, or at least more markedly, to the larger class of plants. The flowering, or procreative organs, as the Calyx, Corolla, Pistil, Stamen, Pericarp, &c., appear, at first sight, of secondary importance, but, when it is considered that sexual intercourse is as indispensable to the consummation of the fecundative power in plants, as in animals, their necessity and usefulness can no longer be lightly valued.

From the consideration of the Structure, it is natural to enquire the means by which the vivifying principle is excited, the organization developed, and the life and health of the plant sustained.

The exciting causes of germination are air, heat, and moisture, and of these agencies a happy combination is indispensable, for air and moisture, without heat, would fail to excite the vivifaction; while heat and moisture, or, air and heat, alone, would be equally inefficacious. The temperature of the air and top soil in spring is probably between 40 and 50 degrees of Fahrenheit; this natural temperature is increased, perhaps, as regards the germinating subject, by some slight fermentation which takes place in the conversion of the superabundant carbon and mucilage; for, so long as the seed remains *cool* or dry, or excluded from the *air*, its dormancy continues, and its load of carbon remains intact. As soon, however, as circumstances combine to excite the living principle, and germination commences, a new substance is formed from the alburnum of the seed, called diastase, whose province would seem to be to convert the insoluble starch of the seed into dextria and sugar, for the support of the embryo plant;—there is small doubt but chemists have been splitting hairs in the dark, and have mystified what nature performs in a more simple way than this, and Professor Lindley, in his "Theory of Horticulture," states that:—"The embryo which the seed contains swells and bursts through its integuments,—it then lengthens, first in a direction downwards, next in an upward direction, thus forming a centre, or axis, around which other parts are formed. No known power can overcome this tendency, on the part of the embryo, to elevate one portion in the air, and to bury the other in the earth, but it is an inherent property, with which Nature has endowed seed, in order to insure the young parts when first called into life, each finding itself in the situation most suitable to its existence,—that is to say, the root in the earth, the stem in the air."

Almost every one is familiar with the peculiar sweetness which very young plants possess; this sweetness arises from what chemists designate as "grape sugar:"—"With the assistance of this saccharine secretion, the root, technically called the radicle, at first a mere point, or rounded cone, extends and pierces the earth in search of food; the young stem rises and unfolds its cotyledons, or rudimentary leaves, which, if they are exposed to light, decompose carbonic acid, fix the carbon, become green, and form the matter by which all pre-existing parts are solidified. And thus a plant is born into the world; its first act having been to deprive itself of a principle (carbon) which, in superabundance, prevents its growth, but, in some other proportion, is essential to its existence." In this last passage, the Doctor has not used that lucidity for which his expositions are in general so remarkable; he doubtless means that the seed germinates under opposite circumstances to those which must contribute to support the future plant. In light, plants give off oxygen, but oxygen is necessary to the decomposition of the superabundant carbon and mucilage of the seed; hence it may be

inferred that an absence of light is friendly to germination, and readily conduces to the disengagement of carbonic acid.

In this way have plants their infancy, with habits and wants almost the opposite to their requirements in a more mature state ;—the excitement of their latent vitality dependent upon causes in some sense inimical to the welfare of the future plant—height, for instance, without which vegetable life is sickly and feeble, is unfriendly to the germination of the seed. The disengagement of carbonic acid, and the absorption of oxygen, appear as a contradiction of one of those laws by which its after state is developed and sustained. How highly important, then, is it that agriculturists—that farmers, the business of whose lives lies almost exclusively in the elimination and nurture of vegetable life, should familiarize themselves with all those natural causes conducive to the results to which they professedly, but blindly, strive to attain ? Yet how few care to inform themselves of the most ordinary and simple rudiments of their craft ;—many believe that to hold a plough, to load a dungcart, or to perform the low offices of physical drudgery, is the highest qualification to which the professional farmer need aspire ;—they care not to enquire for what reason they plough the land, or carry out the dung ; enough for them, their fathers and grandfathers have done so, and have produced results without enquiry of the cause. It is to be hoped that this age of apathy and darkness is passing away, and that Agriculture, by the diffusion and aid of education and enlightenment, will assume its place among the most important and intellectual avocations of mankind.

The Seed, as has been stated, is a vital organization, whose vitality is suspended, or dormant, awaiting the combination which shall excite its vivification, this combination being a just proportion of heat, air, and moisture, applied ;—chemical changes are effected, and physical organization is shortly produced;—in other words, the vitality is excited, the latent life becomes active, a radical or root is thrown downwards, from the incipient collett, while a stem shooting up and through the soil, the young life is seen putting forth its energies in the development of cotyledons, or, as they are commonly called, seed leaves;—and the newly-born plant is now supplied with those organs which most immediately minister to its sustentation and growth—the root and foliage—the mouth and lungs of vegetable organization. A new stage of existence is now arrived at, *germination,* which was aided and sustained by the saccharine juices formed by the transmutation of the compounds of the seed. It has progressed, so to speak, into *vegetation,* and organic functions are called into action to seek, in the soil and atmosphere, those gaseous and aqueous fluids which form the natural food of the plant, —such food as may be best adapted to its specific nature, and most proper for assimilation to its organic structure. These may be either organic, or inorganic,—Liebig appears to lean to the belief that inorganic matter (by which is meant such matter as has never before been the recipient of life) is the real, if not the only, nutritive agent of the vegetable structure, and thus, by the assimilation of rocks into vegetable life, do the very stones become bread,—and means are found, in what we consider the simple laws of nature, to convert substances, not otherwise applicable, into such as are well adapted to the nourishment and support of animal life.

Unquestionably this is a very beautiful phase of the benevolence of an Almighty Providence ; one of the many silent and inscrutable operations which are daily and hourly wrought for our support and preservation. Respecting all, which we are certainly much too little inquisitive, as we are likewise much too little grateful.

For the present purpose, Roots with their fibres may be described, though not very correctly, as the mouths of plants and they stretch themselves out in all directions downward and laterally in the earth in search for food, and either by affiinity or attraction, invariably tend toward that matter in the soil which is most congenial to the growth or development of the structure of the plant to which they belong; the nutritious fluid is absorbed by the spongioles or mouths at the extremity of the roots and fibres, and transmitted through them to the stem, the cellular and pipe-like structure of which passing it onward to the various branches and leaves, it is elaborated and woody fibre is formed by the disengagements and assimilation of carbon, while the freed oxygen passes off to the atmosphere in nearly pure gas. But besides carbon, the soil or the atmosphere must supply other nutritive substances, some as general agents in the vegetable structure, others as specific ; of these may be noted Lime, Water, Flint, Phosphorus, Sulphur, Soda and others, these substances are rarely if ever in a simple state in cultivated soils, but are generally found

in combination with that matter for which they have a natural affinity.

To speak of the constituent parts of plants in a more methodical phraseology, it may be said that nine-tenths of the vegetable structure is composed of Carbon, Oxygen, Hydrogen, and Nitrogen, and these four elementary substances afford food for plants in the compounded forms of carbonic-acid, water and ammonia. Eighty to ninety per cent of the constituent parts of all vegetables is carbon and oxygen. Iron and silica (flint) are also absorbed and carried into the vegetable structure. Phosphorus and sulphur are also required to the full development of vegetable life, as are potash, soda, magnesia, &c. But though their presence is perhaps as indispensible as the more predominating constituents, their proportions are comparatively insignificant. It is hardly necessary to observe that all matter absorbed into the system of plants from the soil, must be in a state of solution. Lime is found to be a constituent in all those plants with which the farmer has to do. Clover and the cultivated grasses containing a very large proportion.

Now, as by her undeviating laws, nature performs no work of supererogation, it is but reasonable to infer, that all we find by research or analysis is requisite to the organic structure of the plant, without which its perfection would be retarded, the functions of its organs imperfectly performed, and a stunted and feeble development the result.

Having thus very briefly and imperfectly noticed the primary agents of germination, and the mode and sources of vegetable life, it may be well perhaps to consider, how by deduction, an enquiry of this nature may become of practical utility to the farmer. In order to aid us in this important consideration, most invaluable assistance will be found in the analyses and deductions of Grisenthwaite, Leibig, Madden, Johnston and others.

If careful analyses, repeated by skilful manipulations with similar results be worthy of credence, the constituent parts of plants, the elements of which their structure is built have in very many cases been pretty accurately ascertained. From these results the farmer learns that the grain of wheat contains 1-50 part, or about 2 lbs. in every 100 of its weight of mineral ingredients, as flint, lime, &c., which being in solution in the soil are taken up by the roots; that wheat straw has the same components in the proportion of eight or nine to the 100, and the records of analytical enquiry shew, that a good crop of wheat, say thirty to thirty-five bushels to the acre, will remove from the soil on which it grew, from 150 to 180 lbs. weight of flint alone. The smooth, shining and transparent appearance of the covering of the stem need be no subject of wonder when it is found the materials of which it is composed are exactly identical with those from which glass is manufactured. Wheat is essentially a flint crop—old-fashioned English farmers are accustomed to say they prefer to have "a few stones on the wheat ground;" ask them their reason and they tell you that from experience "they know wheat does best when there is some stones upon the land," and this simple answer affords a marked illustration of the utter ignorance in which one of the most important and universal operations of life—the manufacture of the great staple food of man has been and still is carried on—the actual stones form no part of the advantage derived, save that which is obtained from their imperceptible crumbling affected by the action of air, by the endless continuation of which process silica is rendered into impalpable powder capable of solution, and eventual absorption by the plant. So, in truth may it be said, that stones are useful to the wheat crop; but the wherefore, it is to be feared has scarcely been enquired about with that diligence, that so important a matter would in any other trade than that of the Agriculturist have long since commanded.

The stem or stalk of wheat is that portion of this plant which is most nearly allied to woody fibre, whose principle constituent is carbon and the aqueous fluids; it may not be irrelevant to notice in common with this assimilation of Carbon to woody fibre, that the familiar production of sweet sap from which such quantities of maple sugar is annually made, is formed, or generated somewhat in this wise: in the fall of the year starch is formed in the woody fibre of the tree, and remains unchanged during the dormant state of winter, but as soon as the aqueous fluids begin to ascend in Spring, they carry with them to the starch the diastath elements of its decomposition or rather its conversion, and the starch becomes sugar; to make this more clear, and to mark the beautiful simplicity with which Nature effects her operations, it should be borne in mind that the elements of sugar and Starch are identical, the simple difference being the arrangement of their proportions; that is to say—any given

quantity of either of these substances will contain exactly the same amount of the elements of its composition, namely, carbon, oxygen, and hydrogen, as is contained in the same quantity of the other gum is likewise identical in its composition, so that 100 lbs of sugar, starch or gum, will contain in round numbers about 50 lbs of oxygen, 44 lbs of carbon, 6 lbs of hydrogen; the wide differences in the characteristics of these compound substances as we daily meet with them makes this fact somewhat hard of belief, yet nevertheless such is the truth; such are the indispensible requisites, not only of the ingredients but of the same proportionate quantities; the great difference in the compounded substances being due solely to the atomic arrangement of the components. The nutritive property of wheat is perhaps in proportion to the amount of gluten it contains. And this substance partaking both of the nature of gum and sugar with azote, varies n quantity in almost all wheat, and very markedly in that of some countries. Professor Thompson in his "Organic Chemistry," states that an analysis of Odessa wheat yielded fourteen parts of gluten and eight parts of sugar, against ten parts of gluten and four of sugar in a French sample, and the aggregate of the gluten, sugar, and gum in the two analyses was in favor of the Odessa wheat, as twenty-seven to nineteen; and its consequent nutritous qualities as human food were in that proportion. Again, Johnston says, that "crop of wheat yielding thirty bushels per acre, weighing 1,800 lbs affords of nutritive matter 270 lbs. of huck or woody fibre—990 lbs. of starch, sugar, &c.—180 to 340 lbs. (a mean of 260) of gluten—36 to 72 lbs. of oil or fat—and 36 lbs. of saline matter.

From all which tho deduction is marked, plain, and simple. Offer to nature the most ordinary facilities and the dormant germ is vivified; a fibrous and organic structure is to be fed and built up, and man is required only to furnish such rtion of the raw material as locality, or artificial causes have made deficient. If he places his flint plant where flint is absent, either naturally or by repeated draughts upon any originally short supply, he must remedy the error by artificial aid. If he desires his land should produce gluten, or rather an organization capable of assimilating the gaseous or aqueous fluids into that substance, it is no great stretch of intelligence for him to perceive the necessity to supply its elements. If his lime plant is to thrive, he will surely perceive that lime must be present in the in the soil. A very slight acquaintance with the organic constituents of his nitrogenous crop will shew the indispensibility of Ammonia. Simple however as are these deductions, yet are they not to be arrived at without the previous attainment of such an amount of analytical knowledge of the plant he desires to produce, as shall teach him the natural demands for its healthy organization and mature development. This must of necessity, be the starting point. And in this seemingly trifling yet highly important particular are farmers for the most part lamentably deficient. Its attainment is not only not sought, but actually spurned by many who are reputed good farmers—*good, because more fortunate than wise.* It is to be regretted that this apathy is so prevalent, and that so poor an argument in favor of ignorance, as its casual success, should be admitted as conclusive. There is no greater enemy to improvement in Agricultural science than your thorough going, old fashioned, self-sufficient farmer, whom you could as readily convince that he was his own plough-horse as persuade him that the smut on his wheat was a parasytical plant. The practical utility of our enquiry would seem to resolve itself into this:—That it is essential to the Farmer, that he should possess such knowledge of the physiology and wants of those plants which he desires to cultivate, in order to enable him to supply with some degree of intelligence, all those appliances which minister to their vigorous and healthy development; that he should know the land in which he sows his grain already contains the nutritive elements which the plant naturally seeks in the soil, and in default of its containing any or all of them, to supply understandingly, and not blindly, its mineral, mechanical or vegetable deficiency.

It is true that Farmers occasionally manure, as it is called, by carrying out the dung from their yards, and ploughing it into the land; but, to speak generally, does the farmer of Upper Canada know in what mode, by what process, by what chemical or mechanical operation the refuse of animal and vegetable life, is converted into the indispensable food of man; can he tell you in any connected and intelligible manner of the gradual and varied changes that necessarily take place; can he explain the conversion of rotted fish into vegetable organization, or shew the transmutation of the sea shell into the natural and nutritious food of plants; can he detail with the slightest approach to accuracy the causes of those undeviating results with which his every

day experience has rendered his eye familiar? And, why should an answer to these queries be a record of his ignorance? There is no other productive business, or manufacture, which is or can be carried on in so great ignorance with success; it is not reasonable to suppose then, that the success which such limited knowledge attains is only comparative, and that a better acquaintance with the fundamental principles of his calling would ensure much larger profits and more certain results.

A farmer need not be a Professor of Chemistry to learn that carbonic gas is assimilated into woody fibre, and becomes oak, or beech, or maple; that the straw of wheat is formed partly of flint—that the land he tills is decomposed rock, or vegetable or animal refuse; that vegetables feed or breathe, that each particular species has its idiosyncrasies,—its likes and dislikes. Why, he would never think of feeding his dog upon oats, or his horse upon flesh, yet he is hardly arrived at a similar distinction in feeding his crops. Special manures are rarely thought of, and the common and staple friend, the barn yard muck, frequently drawn out, and placed in small heaps in the field, often lies through weeks and months of a summer's sun evaporating all its most valuable properties.

Let us hope, Sir, that that widely spreading intelligence which is diffusing itself so rapidly over all the countries of the civilized world may, by its enlightening influence awaken us to a sense of our apathetical and culpable ignorance.

Let us hope, Sir, that an earnest and profitable enquiry may, by dispelling error and prejudice, bring to our minds a thorough conviction of the darkness through which, at present we grope our way to important but uncertain results.

GUELPH FARMERS' CLUB.

SUBJECT:—FALL AND SPRING PLOUGHING.

After an adjournment of some six months, "The Club" held their first meeting for the winter season, on the 8th Dec. Col. Saunders, President, in the chair. The attendance of members, was very respectable and considerable interest appeared to be manifested in the business of the evening. The subject for discussion was, "The relative advantages to be derived from Fall and Spring Ploughing," which was introduced by Mr. Geo. Murton, as follows:—

Mr. President and Gentlemen,—The subject for discussion this afternoon is,—The relative advantages to be derived from fall and spring ploughing. In introducing this question I fear I shall not be able to do it the justice it merits, and I also feel diffident in giving my opinion in the presence of men far my seniors both in years and experience in agricultural pursuits. However I will do the best I can to open the discussion and then leave it for abler men than myself to give us their views on the matter.

The benefits to be derived from fall ploughing in my opinion are many; one of which is, that by getting a portion of the land intended for spring crop ploughed in the fall, it enables us to get our seed in the ground much earlier than we otherwise could. By ploughing a good stiff furrow and then using a cultivator in the spring, I think we can get a much better crop than if we ploughed a second time in the spring. Another reason why I do not think it advisable to plough again is, that it leaves the land too loose and light to stand the drought of our hot summers. Again, by ploughing your land in the fall and then cultivating it in the spring, as before stated you will reap another great advantage, which is, that you will have fresh soil to act upon your crop: whereas when you plough twice you are exposing the surface employed the previous year. By using a cultivator you can dispense with one ploughing. Another advantage would be that you could plough much later in the fall and thereby give the cattle a longer run over the stubbles. The land that is intended for spring crop should have the ridges well rounded, and the furrows thoroughly cleaned out, so as to allow the water from the melting of the snow in the spring to get away at once, instead of letting it remain to soak into the soil. I consider there is as much need of keeping the furrows open on land that is ploughed in the fall for spring crop as there is on our fall wheat, for land that has been so saturated will not work as well as if it had been drained in this simple way. With regard to the proper time for fall ploughing, I dare say there are a great many different opinions; my own is that it should be done as soon after getting our fall wheat in as possible, especially for turnips, so as to give time for the grass to decompose before the hard frost sets in; if not, it will remain quite green all winter and then it will be altogether unfit to plough again in the spring, if the farmer were so inclined. A good proportion should be done before the time comes

for taking up potatoes and turnips, I find from my own experience that I get a very little done after.

We are all well aware that the action of the frost has a very beneficial effect on land that has been ploughed in the fall, especially stiff soils; it renders them much more pliable than they otherwise would be, and this alone should be sufficient inducement for all those farmers who occupy land that is the least inclined to be that way, to plough as much in the fall as possible. I am fully aware that what answers for one farm may not always benefit another, so that it would be folly to suppose that all farmers would adopt the same system; still, I think as a general thing, there cannot be much difference in opinion as to which is the best mode of preparing our land for crop,—fall or spring ploughing.

With regard to the advantages to be gained by spring ploughing, in my opinion they are few. There certainly is a part, and that the most laborious of a farmer's work, that can be done to advantage in the spring, which is, ploughing sod for summer fallow. You can mostly get to work a week sooner and sometimes more on a piece of sward than on any other part of the farm; and not only that, it ploughs a great deal easier than it would in the fall. I think it advisable also to plough in the spring rather than the fall for peas, if you intend putting them on sod, as the winter frost and spring rains wash all the edges off the furrows, and therefore you cannot bury the seed a sufficient depth. I have tried both ways, and must certainly give the preference to spring ploughing in this case.

I do not profess to be much of a barley grower, but from the little experience I have had I should say that it would be better to plough again in the spring; for this reason: if you plough your turnip land in the fall it will get packed so hard during the winter that I doubt whether a cultivator will break it up a sufficient depth, as that crop requires a fine tilth.

Mr. Wright had a few remarks to offer. The subject under consideration was one of great importance. Farmers in this part of the country occupied a great variety of soils, and the mode of cultivation must be altered to suit those variations. The land in this locality was chiefly a black loam; and when the subsoil was sufficiently open to drain itself, the advantages of fall ploughing must be apparent to every one; one reason of which was, that cattle were in better condition, and so better able to perform their work in the fall, than when put to it early in spring. Crops were more affected by spring ploughing than by fall. When this description of land was ploughed in spring, it suffered more from drought than if ploughed in the fall. Heavy sod, and especially land bearing twitch grass, should be ploughed as soon after taking in the fall crops as possible, that so it might have more time to decompose during the winter. A sod with a covering of clover should be allowed to remain as late in the season as possible, taking care that no cattle are turned in to eat it; but on no account should sod of this description be ploughed twice. On new land a different course should be adopted. It should be ploughed as soon as possible after the crop is removed, as by such means it would be ready for working earlier in spring, and so be prepared for a good summer fallowing. Fall ploughing was advantageous in another respect; patches of a weed called "Red Root" or "Pigeon Weed," prevailed to a certain extent. This was a fall weed, and it was desirable, where it prevailed, to plough it down in the fall.

Mr. Murton had tried both fall and spring ploughing for barley, and had found spring ploughing the best.

Mr. Caulfield said a man in his neighborhood had ploughed down a field of twitch-grass in the fall; but the rains caused it to spring up again; and in the following spring there was as good a crop of twitch grass as ever. He had tried the other plan; and although he only ploughed his land twice, he had a better and cleaner piece of fallow than his neighbor who had ploughed three times.

Mr. Wright thought that if ploughed down in spring the grass would not have time to decompose, and when the land was cross-ploughed, or broken up with the cultivator, the grass would turn up green on the surface.

Mr. Card thought rather extreme views had been taken on both sides. Mr. Wright had spoken of ploughing in September, Mr. Caulfield in June. With regard to the former, he thought it a rather strange time. He thought they ought to plough as early as possible after *fall* crop for *spring* crops, especially for turnips and potatoes. He had tried 9 acres of spring crop; 2 acres of which he had ploughed in the fall, 3 in the spring, and the remainder he had not ploughed at all. The part which he had ploughed in the fall, he passed over twice with the cultivator, what he had ploughed in spring, once, and the portion he

had not ploughed at all, three times; and the latter had yielded decidedly the best crop. This was a crop of spring wheat.

Mr. Mackie was in favor of ploughing either *early* in fall or *late* in spring. If they wished to kill weeds they must be ploughed down when in a state of active growth. During six months of the year, plants were in a dormant state; and thus if they ploughed *early* in spring, the plants would be turned under before they had begun to vegetate, and if *late* in the fall, they would have stopped growing, and, therefore, instead of being killed would only be prepared for a fresh growth in the following season.

Mr. Iles generally ploughed for spring crops as soon as his fall wheat was reaped; for potatoes and turnips late in the fall. For summer fallow, he preferred ploughing early in spring; he thought the plants would be decomposed sufficiently for another ploughing before haying time.

MEETING OF THE BOARD OF AGRICULTURE.

The Board of Agriculture held a meeting at their rooms on the 6th, 7th and 8th ultimo.

The following members were present: E. W. Thomson, Esquire, (President), Hon. Adam Fergusson, C. P. Treadwell, R. L. Denison, John Harland, Esqs., and Professor Buckland. The following is a brief abstract of the business done:—

A large number of communications were received and read, relating to matters of detail, and which, after receiving consideration were duly disposed of by the Board.

A communication was received form Mr. Evans, Secretary of the Lower Canada Board of Agriculture, stating that it had been decided to hold the next Provincial Exhibition of Lower Canada, at Sherbrooke, on the 12th, 13th and 14th September, 1855.

A communication was received form Mr. Sheriff Ruttan of Cobourg, stating that preliminary action had been taken in Cobourg, in relation to the exhibition to be held there next autumn, and proposing the following gentlemen to form the local committee, viz: Sheriff Ruttan, John Wade, Asa A. Burnham, Sir Edward Pooré, George E. Castles, P. R. Wright, Alex. Alcorn, Walter Riddle, Ralph Wade, C. H. Morgan, H. Jones Ruttan, Thomas Scott, D. E. Boulton, Thomas Eyre and Francis Burnett, A. A. Burnham, to be Treasurer, and H. Jones Ruttan to be Secretary.

At a subsequent stage of the proceedings the recommendations embodied in this communication were adopted, and the Committee organized accordingly, with the exception of the name of Mr. William Weller being substituted for that of Mr. Sheriff Ruttan, who is ex-officio a member of the Local Committee.

Several communications were received in reference to the subject of offering encouragement for the importation of Stock; but the Board having already offered double the amount of premium for all animals imported since the exhibition previous to the one at which they shall take the first prize, declined taking any further action in the matter at present.

REPORTS, &c.

The Treasurer, R. L. Denison, Esq., brought up his report and balance sheet of the receipts and expenditure of the Association for their financial year of 1853-4 from which it appeared that the total amount received from Government for distribution to County Agricultural Societies and from the exhibition at Hamilton and the experimental Farm, was £11, 152 8 7., and the total disbursement, including distribution to Counties, expenditure on Experimental Farm, Prize, and expenses of the Exhibition and other expenses of the Board, was £10,391 0 10, leaving a balance in the Treasurer's hands previous to the Exhibition at London of £761 7 9.

The President brought up a report on behalf of a special Committee of the Board, appointed to award a prize of £20, offered by his Excellency Lord Elgin, for the first Drain Tile Machine which should be in successful operation to the satisfaction of the Board. The only competitors were Mr. J. H. Charnock, of Hamilton, and Mr. Bailey of Darlington. The prize was awarded to Mr. Bailey, on the ground that his machine was the first in efficient and practical operation, large numbers of the tiles made by him having been used for draining purposes, and some 20,000 of them having been used by Mr. Mundie, in the improvement of the grounds for the new Government buildings at Toronto. The Report was adopted, and the prize ordered to be paid Mr. Bailey.

A bill brought before Parliament by Mr. Felton, M. P. P., to amend the Act establishing the Bureau of Agriculture, having been referred to the Board, it appeared that one part of the bill

merely provided for the formation of County Agricultuial Societies in the same manner as the bill proposed to be amended, and which are already in operation in every county in Upper Canada ; the other part, and which would be the only alteration from the present Act, provided for the election of new members of the Board at the annual Provincial exhibition in autumn, instead of at the annual meetings of the county societies in the spring. The Board were of opinion that this alteration would not be of any benefit, but would be impossible to carry out satisfactorily at the autumn exhibitions.

The subject of the publication of the Transactions of the Board having been previously under consideration, it was again taken up. After some discussion, it was resolved to publish the transactions in the shape of a Quarterly Journal, similar to the Transactions of the Highland and Agricultural Society of Scotland, the first part of the said Journal to contain a succinct history of the Association from its first organization ; and copies of the Journal to be sent gratuitously to members of the Legislature, heads of Government Department, Agricultural Societies, newspaper offices, &c., the first number to come out on 1st March next. A special committee was then appointed to carry out the object of the above resolution.

The Hon. Adam Ferguson introduced a set of resolutions in reference to the registering of stock, as a substitute for a Herd Book, the difficulties in the way of getting up which it is believed are very great. The resolutions set forth that the opening of a stock Register by the Board, for thorough-bred stock, whether horses or cattle, would be a great aid and encouragement to the spirited and enterprising breeders of the country ; that any person desirous of availing himself of such a register could do so, on certain terms, but that no animal should be registered unless the descent of the same shall be traceable to the British or American Herd Book. After some discussion these resolutions were adopted.

Hon. Adam Fergusson then brought forward another set of Resolutions to the following effect: —That the establishmens, of a Veterinary School, organized upon scientific principles, would prove of essential importance to the Agricultural interests of this Province ; that such an institution well deserves the patronage and support of this Board ; that a Veterinary Lectureship, Anatomical School and Museum, Hospital and Forge, would find a good location in Toronto, and may with case and much mutual advantage, be connected with the Agricultural chair in University College ; that a Committee be appointed to call the attention of the Bureau of Agriculture to the subject, and respectfully to offer suggestions towards its establishment with as little delay as possible ; and that the above Committee shall report progress from time to time to the Board, and use every means in their power to carry the measure into effect. These resolutions were also adopted, and Mr. Ferguson was authorised, as Chairman of the Special Committee appointed, to correspond with the Government upon the subject.

The time to be appointed for holding the next Provincial Exhibition at Cobourg, was then discussed, and it was finally decided to have it take place on the Second Tuesday in October next.

A Resolution was then proposed and carried, conveying the thanks of the Board to Professor Hind, for a collection of specimens of 30 or 40 different varieties of Wheat, presented by him to the Board.

At this stage of the proceedings, Mr. Henry Cowing applied for permission to explain diagrams of a machine invented by him, and which he calls a "locomotive steam plough, and machine of all work." After listening to Mr. Cowing's explanations, the Board adopted a Resolution recommending the invention to the notice of the Bureau of Agriclture, and suggesting that Mr. Cowing should receive some assistance towards getting up a model, with the view of exhibiting it at the Paris World's Fair.

The question as to which Counties Prize Agricultural Reports, should be received from in 1855 was then considered, and it was agreed to ballot severally for one of the Western, one of the Central, and one of the Eastern Counties of the province, excluding those for which Prizes have alreay been awarded. This being done, the choice fell upon the Counties of Bruce, Simcoe and Prescott, which are accordingly eligible for Prize Reports in 1855.

Several alterations were then proposed and adopted, as to the mode of taking entries for competition at future exhibitions, the principal one being that application for entries shall be made upon printed forms furnished by the Board, such forms to be returned to the Secretary's office two weeks at least before the Exhibition should take place.

By a Report from the Secretary it appeared that the members who retire from the Board this year, according to provisions of the Act, but who, however, are ellgible for re-election, are the hon.

Adam Ferguson, David Christie and J. B. Marks, The Secretary was authorized to direct a circular to County Societies, calling their attention to this and other duties at their annual meetings in February next.

A number of other matters of minor importance were next brought up and disposed of, and the Board adjourned on Friday afternoon till further notice.

PROFESSOR BUCKLAND'S REPORT.

E. W. Thompson, Esq., *President of the Board of Agriculture:*

Dear Sir,—In consequence of my personal attendance having been required on the grounds now in course of preparation for Agricultural Experiments, I have been able to visit only a few Agricultural Societies, in accordance with a resolution passed at a former meeting of the Board.

On my return from the Provincial Exhibition the beginning of October, I embraced the opportunity of being present at the Annual Show of the Agricultural Society of the County of Oxford, held at Woodstock. Considering the inauspiciousness of the weather,—the rain coming down in torrents,—the Show, as a whole, was much better than I had anticipated. Much of the Live Stock was of good quality;—of the pure breeds there were several very creditable specimens, as was also the case with Sheep and Swine. I was highly gratified with the display of grain and roots, which were quite superior to what might have been expected, considering the late unfavorable season. I should judge that many of the farmers, both in this and the adjacent county of Middlesex, are fully cognizant of the intimate and important connection subsisting between liberal feeding and the permanent improvement of live stock. I observed, in both these counties, patches of turnips, mangel-wurtzel, carrots, &c., varying in extent from one to three or four acres, on many farms; and, in some instances, I was informed that root culture was much more extensively practised. Travelling through these counties six years since, I observed but few green crops; and the improvements which have been since effected in agriculture, roadmaking, &c., are of a very obvious and extensive description. In the evening, a large party sat down to dinner, and the sentiments enunciated by the active and indefatigable President, Geo. Alexandor, Esq., and others, were of a hopeful and most encouraging kind. From all I could see and learn, I feel quite confident that the Board may safely reckon on the co-operation of the farmers of Oxford in carrying out the great objects of agricultural improvement.

In about a week after my return home, I paid a hurried visit to Brockville, Kingston, Picton, Belleville, &c. The Annual Show of the Leeds and Grenville Society was held at Brockville; and although not very extensive, yet the quality of the live stock and other articles exhibited, indicated careful attention on the part of their owners, and the capabilities of this beautiful and productive section of country. The butter and cheese were of excellent quality: indeed much of this portion of the Province, having a close, calcareous soil, is admirably adapted to dairying purposes. After the close of the Exhibition, I addressed a pretty numerous audience, principally farmers, in the Court House, on some of the more obvious points of improved husbandry, and the means of imparting fresh life to Societies, the promotion of farmers' clubs, &c. It was gratifying to find a strong desire expressed for agricultural improvement generally, and particularly for improved stock, in which the eastern section of the Province appears more deficient than either the central or the western.

I had some pleasing intercourse with several of the more enterprising farmers and merchants of the county of Leeds; and although I cannot in this brief report mention the names of individuals, I must not wholly pass over that of our esteemed friend, Wm. Matthie, Esq., whom I found in the possession of restored health, and as active and zealous as ever in advancing the best interests of the country. Considerable improvements have been effected in the picturesque and flourishing town of Brockville since I was last there, during the Provincial Exhibition in 1851; its commerce is fast increasing, and several of the stores are not to be excelled, whether as regards extent or appearance, by towns of much greater population.

I was under the necessity of hurrying away from Brockville, to attend the Prince Edward County Show at Picton, the next day. Owing to the delay of steamboats, I was not able to reach Picton till the evening, when the Show was over. I had an opportunity of conversing, however, with a considerable number of farmers, and I soon learnt that the Exhibition had been better attended, and was of a superior character to its predecessors, for several years.

On my way up the bay, I observed some pure-bred cattle, sheep and pigs, put on board, the property of Mr. Boyce, of Amherst Island, who was taking them over the water to Bath, to the Show of the County of Addington Society. Mr. Boyce's animals were highly creditable to him, and evidently indicated progress in this, perhaps the most important, department of rural economy. I had some conversation with a few members of the Addington Society, who expressed themselves anxious about the best practicable means of importing and diffusing the improved breeds of cattle.

I had also conversation with Messrs. Ferguson, Cameron, and other enterprising agriculturists of Kingston, upon these questions, all of whom feel a warm interest in extending the benefits of an improved agriculture. They thought that the efficient sustentation of the Provincial Association afforded one of the best means for promoting such objects, and that the holding of the Exhibitions on an equitable principle in the different eligible sections of the Province, would be essential to the continued success of that important organization.

From Picton I proceeded next day to Belleville, to attend the Exhibition of the County of Hastings Society. The weather was unfavorable, but I was delighted to see so large a collection of both articles and people. There was an earnestness and activity about the people which it was peculiarly pleasing to observe. In live stock there were some good specimens, and much of their grain and roots was excellent; some samples of peas, barley and oats, being particularly fine. The Town Hall was filled to overflowing with spectators, and the Ladies' work was both extensive and of superior execution. I have seen nowhere, I think, so much interest taken in these shows by ladies as in the county of Hastings. I addressed the people for a short time in the Town Hall, and felt much satisfied with what I saw and heard. Our friend, B. F. Davy, Esq., the President of the Society, continues as active and zealous as ever. The town of Belleville is rapidly advancing; and throughout this fine section of country, there are unmistakable marks of healthy progress.

I afterwards attended the Township of Hollowell Show, at Bloomfield, in the county of Prince Edward. Again the weather was wet; notwithstanding, the attendance was pretty numerous, and quite a respectable collection of good articles was got together. I noticed some hops, which, in point of quality and curing, would compare favorably with the same production in the old country. Hop culture is increasing in this county, and, when properly conducted, it is said, pays well. The people in Prince Edward seem, upon the whole, very well to do; the county is small, and thickly settled. I gave an address, particularly referring to the important question of importing the breeds of cattle, which led to a long discussion. I observed but few root crops in this county, a matter which the farmers would do well to consider, particularly in its relation to the improvement of stock. From my intercourse with the people both in this and the adjoining county of Hastings, I am led to the conclusion, that the Board may reckon on their co-operation in promoting objects of agricultural improvement.

In the hope of having more time hereafter to give to this interesting and important department of duty,

I have the honor to be, dear Sir,
Your obedient servant,
GEO. BUCKLAND.

December 1, 1854.

NEW STEAM DRAINING PLOUGH.

From the Mark Lane Express.

Some experiments of a deeply interesting and important nature, in connection with the question of land drainage, were lately made at Catherine-farm, on the estate of P. W. S. Miles, Esq., at Kingsweston England, when Fowler and Fry's new steam draining plough was for the first time put in operation. The great utility of underground drainage upon clay soils and in marshy districts is now too generally known and appreciated to leave it matter of debate; but the heavy expense which the adoption of the system of hand labour entails, especially in neighbourhoods where that labour is scarce and dear, has hitherto stood in the way of its general adoption. It will be obvious that anything which has a tendency to facilitate the operation and diminish its cost, must be, in an eminent degree, beneficial to agriculture; and hence scientific and practical men have been stimulated to bend their efforts in a direction tending to those ends. The drainage of moist lands was first attempted by the simple process of digging by spade labour narrow trenches, and laying rude stone drains in the bottom of them. The difficulty of procuring stones and the cost of hauling them, were found

to stand considerably in the way of that process, and the use of draining tiles in various forms was by degrees introduced, but without any decided improvement being effected in the mode of cutting the drain trenches. An important revolution in the process was introduced by Mr. Fowler, of Bristol, agricultural machine manufacturer, in the invention of his draining plough, by which manual labour was in a large degree superseded; but a deficiency still remained. The plough had to be worked by horse power, four horses being employed by it in turning the windlass by which it was set in motion, and the process, although cheaper and more expeditious than spade labour, was, nevertheless, in a degree expensive and tardy. The desirability of applying steam power to a plough upon the same principle soon became apparent, and, impressed with the importance of the object, Mr. Fowler directed his attention to it, and now, as the result of a great deal of anxiety and labour, and of no inconsiderable expense, he has perfected a steam draining plough, which we recently saw in successful operation, and which we have no doubt will speedily take rank among the most useful inventions of the day. A brief description of the machinery may prove interesting.

The steam engine, although mounted on wheels, and capable of being transported from point to point, is when employed, a stationary one, and worked by a horizontal cylinder. It has connected with it two drums, which are loose on the axles. Attached to the larger drum, which draws the plough forward, is a wire rope of beautiful manufacture, the breaking strain of which is 14 tons, the working-strain being 5 tons. This drum is worked by two motions of the fly-wheel shaft, which give a leverage of 22 to 1 on the plough, the drum making 7 revolutions per minute. To the lesser drum, which is worked off the second shaft, is attached a rope, also of wire, but of smaller calibre, which draws the plough back, when it has completed a furrow, to the side of the field from which it started and were it has to begin again. By an ingenious contrivance the drums are formed by the insides of two spur-wheels, so that practically the working is effected by ordinary spur gearing. The drums can be instantly thrown out of gear by clutches moving the pinions on a feather. The larger wire-rope, on being wound on to the drum for the purpose of impelling the plough forward, works round a sheave-wheel or pulley-block anchored to the field at such a point as to draw the plough at right angles to the engine, by which arrangement the necessity of shifting the engine is obviated to so great an extent that almost any field may be drained without once removing it from the position first taken up by it. To the front of the plough is attached a second sheave-wheel, round which the rope is doubled, thereby also doubling the power. The coulter of the plough is of iron an inch in diameter at its widest point, so that the furrow made by it upon the surface of the land is scarcely perceptible and generally disappears after the first storm of rain. It can be worked to a depth of four feet, and indeed deeper if necessary, and is so made that it can be raised or depressed by a hand-wheel under the control of the ploughman, and which works gear connected with a rack at the back of the coulter. The boring of the land is effected by means of a cast-iron mole or plug (the size of which is regulated by the aize of the tiles to be laid) keyed to the bottom of the coulter, and the most striking feature of the machine is, that as fast as it bores the land it lays in the tile-piping, thus completing the drain as it goes, at the rate (when we saw it working) of 35 feet, and probably, under very favourable circumstances, 40 feet per minute. It should be stated, in order to the understanding of what follows, that as the engine winds the large rope on to the large drum, and draws the plough towards it, it at the same time unwinds the small rope which is attached to the back of the plough from the small drum.

The mode of operation we will now endeavour to explain, assuming for our illustration a field 1000 feet square, which has to be drained by drains 10 yards apart from east to west. The engine would be fixed at the middle of the western edge; the plough would be placed on the eastern edge at ten yards from the southern edge of the ground, and an anchor and sheave-wheel would be rigged exactly opposite to it on the western side. The large wire rope would be passed round the sheave-wheel, and thence on to the front of the plough, while the small wire rope would be connected from the back of the plough with another anchor, &c., rigged ten yards north of the plough—that is, at the point to which it would have to be drawn back, and from which it would have to commence again. The machinery thus arranged, the pipe tiles are strung on ropes of fifty yards long (the length being thus limited to economise time and labour in threading), but fitted with ingeniously contrived joints at either end, so that they can be readily and firmly joined together to any length required. These ropes are made of hemp for the sake of flexibility, while, as a matter of economy and durability, and to decrease friction as much as possible, they are coated with wire. The ropes being threaded and joined, one end is fixed immediately behind the mole, and the machine being set in motion by the steam engine, the coulter cuts its narrow channel through the land, the mole bores and lifts the subsoil, and the pipes are drawn throught the aperture, and closely and neatly put together, forminig the drain. The sheave-wheels are then shifted, the plough drawn back by the small rope, and the second and succeeding drains are cut and piped in the same way. The ropes, after the tiles have been laid, are drawn out by horses, which is the only employment of horses labour required. The plough is attended by a man, whose only duty seems to be to keep it upright where the land is out of

level ; but Mr. Fowler has perfected some self-acting level guides which would be shortly attached, and which would enable the plough to adapt itself to any inequalities which might arise, and make it independent of any guide.

The advantages which Mr. Fowler expects to derive from his inventious are manifold. The first and most important is, of course, economy. The sum at present charged by contractors for draining on a large scale per acre, is from £5 to £6. A considerable tract of land at present in the course of drainage in an adjacent county, is understood to have heen taken at £5. 5s, or £5. 10s. per acre. Mr. Fowler considers that, by his machinery, land may be drained for from £3. I0s. to £4 per acre, yielding a fair remuneration to the contractor. One engine with ten men and two horses will, he calculates, do as much work as 120 men, and, under favourable circumstances, as much work as 150 men would do by the old spstem. With regard to the capabilities of his invention, Mr. Fowler calculates that with a single engine and plough he shall be able to drain about 30 acres per week.

STEAM PLOUGHS.

The great motive power of steam has been less applied with success to the cultivation of the soil than to any other object in which motion is desirable. Old mother earth presents stubborn obstacles to a power working always in the same uniform but unintelligent manner. Steam and its machine children cannot adapt themselves to the undulating surface, nor can the motive power, in the state in which it has yet been applied, be guided through the land without its cumbrous body interposing a ponderous resistance which no known degree of force can overcome with the observance of economy. We present here the following summary of the history of the steam plough from the *Agricultural Gazette.*

" The first steam plough was set to work in 1836, and since that time several ingenious individuals have constructed machines upon much the same principle—employing an engine to drag sets of ploughs to and fro by coiling ropes or chains round drums and palleys. The latest is a design, provisionally patented in November, 1852, in which a wire rope is to be wound up, having ploughs, harrows, &c., attached. Probably the most successful is Lord Willoughby's, which has been at work in Lincolnshire. As steam has effectually delivered our horses from the round of the thrashing machine, it may be a laudable endeavour to displace them from the ploughs ; still we would rather direct the aim of inventors to some more complete and efficient operation than mere ploughing. The *spade* being a better tool than a plough as regards the quality of its work, some persons, have tried to imitate its movements by mechanism. In the Great Exhibition was seen a large frame on wheels, carrying a number of spades to be worked up and down and oscillated by means of cranks upon a rotating shaft turned by an engine, while the soil thrown off from these spades was to be caught and turned over by a series of scuppets. There was also a model in which a frame of spades or forks was thrust simultaneously into the ground, vibrated so as to loosen the solid earth, and raised and turned half round so as to invert and deliver the loosened spadefuls. Both these machines were reviewed in the reports of the Exhibition, published in the *Agricultural Gazette* in 1851. In the year 1847, Mr. Barrat, of Paris, patented another form of machine for imitating manual digging. It consisted of a locomotive engine working behind it a series of *mattocks*, each somewhat similar in shape to a carpenter's adze, only having a couple of prongs instead of a broad blade. By proper apparatus, in connection with strong springs, these heavy mattocks were struck into the ground ; then, by a sliding movements of the bar upon which they hung, they were drawn a short distance, backward, to turn over the detached pieces of soil. Meanwhile, the engine msintained a slow uniform rate of progress over the solid land in advance of the tillers. The latest invention for actuating spades by steam power is that of Mr. Bauer, patent in November, 1853. And besides these schemes, there have been others for manipulating spades by mechanism put in motion by the mere *traction* of the machine ; as, for instance, two inventions provisionally patented in 1853, and another fully patented in September of the same year, in which some broad blades are made to delve, lift, and invert the soil, by means of horse-power applied to draw the implement along."

STEAM POWER SUPERSEDED—NEW INVENTION.

Many discoveries and inventions of immense importance to the world have been tested within the last ten years, and found to answer all reasonable expectations. Many others that were to " supersede" those now in use, especially the steam engine, have been introduced to the public with much confidence by their inventors, but soon ceased to attract notice, and are now forgotten. Whether we have at last discovered a new mechanical power destined to drive the steam engine, with all its triumphs and disasters, out of use, may well be doubted. The following description of a new invention, called " Poulson's patent pendulum T lever," is from Herapath's London *Railway Journal :—*

STEAM POWER SUPERSEDED.—Improbable as the announcement contained in this heading may seem to many or most, the fact still stands—steam, as a motive power, is at length about to be wholly superseded. The important invention to which we allude is destined to create a revolution as sudden, complete and wonderful, as that occasioned by the introduction of the power which it will supplant. For, strange to say, the immense saving accomplished by the new method of propulsion, not to mention its other advantages—and they may be many—will make it imperative upon all now employing a steam power, whether in propelling a railway engine, a steam vessel, the spindles of a factory, a saw-mill, or for any of the thousand and one other purposes to which it is at present applied, one and all at once to blow out their fires and adopt the new system. There is not a word here but is written in all sober seriousness, startling as the intelligence may be. The invention has already been patented, under the name of "Poulson's patent pendulum T lever," and within a month from the date at which this is written it will be brought fully before the public; hence it is unnecessary at present to enter upon any explanation of its mode of action. Suffice it to say that two men in a sitting position will be able with ease to propel a railway engine of 25 horse power, with its full complement of carriages, at any speed to be attained by steam power! The tenders and boilers of the present engines will be no longer required, and the new engine will be constructed of about one-fourth the weight, and of, say, one-sixth or one-eighth the cost. The wheels and frames of the present engines will be available for the new ones. The saving that will be effected on railways, by decreased weight and cost of engines, the sweeping away altogether of both weight and cost of tenders, coke and water, will, we need not say, be immense, and to these advantages will be added, in its application to sea-going vessels, the great saving of space now occupied by the coal, and thus enhancing the carrying capabilities of those vessels to a remarkable extent. Henceforth, no fears will be entertained in setting out on a voyage round the world, of being caught in the midst of a western ocean, without the means of making headway, by a failure in the supply of coal, or of having to traverse the ocean 1,000 miles out of the desired course to obtain the necessary addition to the store of this now indispensable article. With the exit of steam, moreover, we shall have an end of the disasters, through the bursting of boilers—no inconsiderable point in itself—in the list of the advantages of the new movement. We must also add that the principle will be applied at once to ships' pumps, and with the most beneficial results; four men will be able to pump the largest vessel dry, and with so much ease to themselves as to continue their labors for six or eight hours consecutively, whereas at present 30 men are occasionally put in requisition for the same thing, and only capable of working half an hour at a time by the utmost stretch of their power.

Communications.

REPORT ON THE PRESENT STATE OF BRITISH AGRICULTURE,

BY WILLIAM HUTTON, ESQ.,
Secretary of the Board of Statistics, Quebec.

[We are compelled, for want of space, to break up Mr. Hutton's very valuable communication into parts, so that the subject will be continued in consecutive numbers.—ED.]

Having lately had an opportunity of witnessing some material improvements that have taken place in several of the agricultural districts of Great Britain—of hearing discussions upon the favorite agricultural topics of the present improving age—it may not be uninteresting to allude to a few of the subjects that are at present engaging public attention, with the hope that the farmers of Canada—if they cannot closely follow the example of their cotemporaries in the old country—may at least know what channel their thoughts are taking, and what course they intend to pursue in these, to them, extraordinary times,—extraordinary because of the very high prices of agricultural produce of every kind—grain—meat—flax—seeds, &c.,—extraordinary too from the extreme wetness and coldness of the latter seasons, rendering it extremely difficult to cultivate the land to advantage,—extraordinary also from the great mortality amongst cattle, many extensive farmers having lost nearly their whole stock,—and also from the remarkable fact, that although prices are ruling so high, there is a very great decline in the importation of foreign stock from Holland and other quarters, thus promising very high prices for some time to come for home-fed beef and mutton, as well as for grain. Not for many years has this great truth been so apparent to the agriculturists, "that they are much more interested in having *good crops* than *high prices*." The occupiers of land throughout Great Britain, except in a few dry localities, have found their money returns for last year's wheat very much smaller than they would have received for *good crops* at *moderate* prices. Prices are nothing to the farmers who have nothing to sell. The remedies for these evils, which almost all over Great Britain and Ireland the farmers appeared to be adopting, were, 1st. Tile draining to an immense extent—the tiles were round—about 15 inches long, and having a bore of about 2½ inches. The drains are sunk with a gradual slope till they are as narrow as possible

in the bottom, and made 2, 3 or 4 feet deep, and ten or twenty yards apart, according to the fall and requirements of the soil; then the tiles are laid, touching one another in the bottom, and covered with a little straw before the mould is put in. The water filters through at the joints, and even through the tiles themselves, they being made of a very porous nature. I saw miles of these drains in operation, and emitting considerable streams of water. The improvement to the crops, in very many situations, in a damp season, was fully fifty per cent., and in many fields where there was an abundance of surface fall, and where an unpractised eye would suppose there was no necessity whatever for drainage, the farmers assured me their crops would be twenty per cent. better for tile draining.

The expense of draining wet, spongy land, in this way, is very considerable, being about six to ten pounds sterling per acre. It is often done by the landlord, who charges the interest of the cost in addition to the rent; but in general the landlord furnishes the tiles, and the farmer the labor. I saw some of these drains in perfect working order that had been made ten years, and I saw one instance where the farmer was making these drains at his own cost, although he stood at a rent of 40s. sterling per acre per annum—the landlord having refused to furnish either tiles or labor. This draining and also ploughing the land in well-rounded, narrow ridges, were the principal means taken to obviate the extreme wet and cold which have for some seasons been so much felt in Great Britain.

That this tile draining is practicable, and would be useful in Canada, even with our dry climate, can scarcely be doubted; at all events, in many localities, and in a ratio corresponding to the demands of our climate and soil. There are very many situations where a reasonable outlay would pay excellent interest, especially so long as prices continue as remunerating as they are at present. I am induced to insert here the observations of one of the best practical farmers in England, addressing his tenants upon a late occasion:—"Believe me," said he, "there is no greater truth than that expressed in the old adage—'If good management won't pay, bad cannot.' In the first place, then, begin with draining your land, when necessary, of superfluous water, or I fear you will soon have to complain of having drained yourselves of your superfluous cash. Secondly: As far as in your power, never suffer the soil to produce anything but what you put into it, remembering that 'ill weeds grow apace,' and that there is no crop so ruinous to cultivate, so disgraceful to possess, and so expensive to eradicate. Thirdly: Endeavor to keep your farms in such a state of high cultivation that you may be enabled to take your crops *off* the land, instead of *out of* it, that is, *never overcrop;* for you may rest assured that that most unprovident habit of overcropping, or in any way detracting from the productive quality of the soil, will, in the long run, prove extremely detrimental; and, finally, never hamper yourselves with more land than you have ample capital to manage—the probable result of which would be, that your farms, instead of being a comfort and a profit to you, will hang like a millstone about your neck, and, by continuing in such a hopeless speculation, you will rob yourselves of your last shilling." All this advice is extremely applicable to us Canadian farmers, who are very much addicted to the habit of cultivating more land than we are able to do well or successfully, and, in too many instances, are too fond of overcopping, underfeeding and undercleaning our land, and not fond enough of underdraining it.

Another evil, which I have alluded to, is the great scarcity of Cattle, which has arisen in the North of Ireland, and in many parts of England, from a fatal disease, which appears to baffle all skill to arrest. To remedy the evil arising from this loss, and also to take advantage of the very high price of beef and mutton—I observed some very important and very successful exertions having that tendency. The first was to grow a greatly-increased breadth of turnips and marigold, by aid of bone dust and guano, in addition to their farmyard manure. With these they fed the surviving young stock very abundantly—forcing them forward at a very early age; on many occasions I saw cattle two years old past in the stalls, which made excellent beef, and were sold as high as from £12 to £16 sterling each for slaughter. These animals were chiefly Durhams, or crosses from Durhams, though there were many of other breeds; but the Durhams appeared to be the best for forcing, and were generally declared to be so. From a few weeks old, they were fed with broth, made of linseed, which the farmers in many localities collected from their own flax crops. For many years the flaxseed had been allowed to be lost, the farmers not taking the trouble to gather it or allow it to ripen, from an idea that the ripening of the seed,

so as to be available either for sowing or food for cattle, was injurious to the quality of the fibre of the flax itself; but in this respect a wonderful change has occurred; very few farmers now allow it to be lost; on the contrary, it is found that the seed adds fully one-eighth to the value of the flax crop. I saw many splendid calves that had not tasted milk from being six weeks old; having been actually fattened and forced forward, almost beyond comprehension, by this nutritious food, to a certain age, when the greatly-increased supply of turnips and marigold kept up the growth thus auspiciously begun, and (like money making money) created such an increased supply of the richest possible manure, that many farmers have been enabled to add very largely to the breadth and quality of wheat cultivated.

The *Mark Lane Express*, for April last, in its Agricultural Report, contains the following remarkable fact:—"The quantity of land under wheat culture this season is by far the largest ever recollected. Almost every district in England (and it might have added in very many parts of Ireland) has an excess over last season by at least one-third; hence, should the crop prove abundant, we may look forward to an immense aggregate return."

It is worthy of note in passing that this great increase in the cultivation of wheat, has not taken place without an increase in the growth of green crops, to ensure a fresh supply of that particular kind of nourishment to the soil required for the growth of wheat; the extra supply of manure for these green crops was first supplied by means of Guano and bone-dust, and other profitable manures, the use of which is rapidly extending. A late London Economist thus remarks—"A constantly increasing interest in the supply of guano is being manifested by Agriculturists—the vast benefits they derive from the extensive use of portable manures becoming every day more widely appreciated. Apart from the difficulty of making sufficient yard manure on a farm at reasonable cost, the time occupied in carrying it out and ploughing it into the land is great, while the wear and tear of horses, carts, and tackle is very considerable; but the great advantage of portable manures is, that the use of them gives such an impulse to the growth of green and root crops on a farm that the home-made manure is wonderfully increased as well as the produce of grain." There is a new kind of light manure, directions for the application of which are given in the North British *Agriculturist*. It is nitrate of soda, a rough kind of soluble saltpetre, and as these directions which are very simple may be of some practical value in Canada—if not now a few years hence—I extract them:—"Nitrate of Soda used as a top-dressing to glass and clover, ought to be applied when the land is rather dry but when rain is expected, as it requires to be washed into the ground. The Nitrate should be applied at two different times, at least in about equal proportions, generally about a month intervening; the first application in March (in this country April) if weather be suitable. If the grass is intended for soiling a double quantity (viz., two cwt.) may be applied with or without an equal weight of guano. As to cereal crops, wheat, barley, oats, &c., these should be four inches in height of blade before the first application. To prevent lodging of the crops, one cwt. of nitrate of Soda and two cwt. of common salt will generally be found the most profitable quantity; one half to be applied at each time, viz., 56 lbs. of nitrate of soda and one cwt. of common salt. To assist in its more equal distribution, saw-dust may be mixed with it. Common salt may be used in a larger proportion, say three or four cwt, but, in this case grass seeds should not be sown as the salt will destroy a portion of the clover seed.

When the grass is intended for hay an equal money value of guano, viz., two cwt. along with one cwt. of the nitrate will be usually more profitable than the application of two cwt. of nitrate alone. The editor adds, "five times the usual quantity of nitrate of soda is likely to be used in Scotland this season from the attention recently drawn to its fertilizing power; orders have been given for 500 tons. In many well authenticated experiments the increase of from six to ten bushels of wheat per acre has been obtained from top dressings of nitrate of soda. The price is quoted in the *Economist* at 14s. to 19s. stg. per cwt. The *North British Agriculturist* to this valuable information further adds, "We need scarcely say that in recommending the more extended use of light or portable manures, we do not suggest any diminution of efforts to make the largest possible quantity of yard manure, or to feed as many sheep as possible on the land, for these are the bases of Agricultural success. But as *additions* to the manure produced on the farms to increase the breadth of green and root crops, and to bring the land up to that high standard of fertility at which the growth of large crops in all or nearly all seasons, becomes comparatively

easy, the use of artificial manures is much to be encouraged. For *cereal* crops *nitrogenous* manures are to be used—for *roots, mineral* mineral manures will be found highly beneficial; the first enquiry of the farmer purchasing must be as to the constituents of the crops he proposes to grow, and the requirements of his particular soil. Professor Way gives the following as the mineral matters in a crop of turnips of twenty tons including the tops, in Phospheric Acid 38; Sulphuric Acid 50; Lime 75; Magnesia 12; Potash and Soda 144; Common Salt 58. As the most essential constituents of the Turnip "are phospheric acid, phosphate of lime, potash, soda, and nitrogen," to supply these should be studied in preparing turnip manures. The first two and last exist in guano and also in bones; potash and soda generally exist in the soil, the latter conveyed by rain water as is also nitrogen—but it is found always profitable to supply it in the manure The most essential condition of manures is the proper degree of *solubility*. In the turnip it is particularly essential that the plant should be pushed at the early stage of its growth by the manure being *soluble* while during the growth in summer, part of the manure should slowly become soluble so as to prevent waste. Peruvian guano alone at the rate of five cwt. per imperial acre is found an excellent manurial dressing for Sweedish and other turnips. In applying to cwts there is conveyed to the soil of ammonia 89 lbs., of phosphate 155 lbs., of phospheric acid 19 lbs. *Turnips grown with Peruvian Guano frequently become prematurely ripe—those grown with bones on the other hand not only geow on up to the end of autumn, but the frost stops their development.*

The following dressing for Swedish Turnips in addition to yard manure, applied in the Autumn has been found successful:—

2 cwt. of Dissolved Bones at 7s.	per cwt.	14	0
2 cwt. of Rape Dust at 6s. 6d.	"	13	0
1 cwt. of Sulphate of Soda, 4s.	"	4	0
2 cwt. of Common Salt at 1s. 6d.	"	3	0
28 lbs. of Nitrate of Soda, 5s. - - - - -		5	0
		£1	19	0

This for a clay loam—but for a light sandy or gravelly soil, eight bushels of ground bones should be added. Whereas farm-yard manure has been applied, one cwt. of Peruvian or two cwt. of other guano should be added, or the rape dust increased by three cwt. or 56 lbs. of nitrate of soda applied. These applications will produce a very full crop, the *variety* of substances acting more powerfully than the same money value of any of them *separately*."

(*To be Continued.*)

ON DRAINING LAND.

To the Editor of the Agriculturist.

L'Original Dec. 18th, 1854.

Sir.—I herewith enclose you an article on draining, with which I have been kindly favored by J. B. Marks, Esq., of Barriefield, near Kingston, and which he has consented to have published. As I think the practice of subsoil draining is that by which the agriculture of Canada can be more advanced than by any other that can be adopted at this time, I beg that you will please insert it in your next issue.

I am, sir, your most obedient servant,
CHARLES P. TREADWELL.
President of the A. A. of U. C.

My Dear Sir,—Agreeably to your request I send you my views on draining.

J. B. MARKS.

Barriefield, Sept. 22nd, 1852.

The following remarks respecting the growth of clover, wheat and Indian corn, and draining of land, are so intimately connected with the improvement of the country, that no farmer posessing common intelligence will overlook their importance:—

The red clover is of immense importance to the improved system of American husbandry, taking the place of almost every other kind of ameliorating crops, its tap roots penetrate and loosen the soil, whilst the leaves and stems produce abundance of nutritious food for the farm stock, and both roots and stems, when turned under by the plough, are extremely enriching to the soil.

The clover grown annually in the United States of America is estimated at one million five hundred thousand bushels, worth more to the growers than five times that number of dollars, and it is desirable that our farmers should immediately go into this profitable branch of husbandry.

Besides, green clover is frequently turned under in the fall, to enrich the ground preparatory to a crop of wheat, or in the ensuing spring for the benefit of Indian corn: but to produce abundance of clover, wheat or Indian corn, the land must be thoroughly drained. This well done, no doubt the soil Canada will produce either of the before mentioned crops equal in quantity and quality to any raised on the land in the neighboring union.

Draining about dwelling houses, out-houses and homesteads, will be conducive to health, and will prevent ague.

On arable land all surplus water more than sufficient for the benefit of growing crop, should have the means of escaping into drains by percolation. Moisture above the quantity required for vegetation is injurious both to the soil and the crop. The

soil becomes sodden and sour, and robbed of its fertility, and the grain, clover and other grass roots stunted in growth for want of draining ; no doubt but a superabundance of wet remaining in the soil tilled to fall wheat without the land being previously drained, is often the cause of killing the crops, when the spring frost has been the supposed cause of injury. The same remark will apply to clover, grass land and meadows.

The best mode of draining, practised in Great Britain is with pipe or tile draining, and now that we have the advantage of the presence of Mr. Charnock, residing at Hamilton, who last year arrived in this Province, with his patent tile draining machine, it is hoped that tile draining hereafter will soon come more into general use.

Another sort of drain is made by opening the land to the usual depth of four feet, placing in the bottom two flag stones forming a flattened cone, thus, A, the lower part of the flags to be set firm on the outer side of the bottom, bringing the top parts together, thereby forming the arch or hollow space in the bottom of the drain ; and if the space between the side of the drain to the top of the stone flags be filled in with small stones so much the better cover with a light coat of cedar or pine boughs, tramping the earth back in filling up the drain.

When small round boulder stones can be procured, not larger that six inches in diameter, and placed in the bottom of the drain, to the depth of two feet, with a covering six inches thick of small stone broken to pass through a two inch ring, placing cedar boughs thereon and tramping back the earth as above mentioned, always leaving a space at least fifteen or eighteen inches between the boughs and the surface, an excellent drain can be made without the flags.

In many parts of this country, drains are often constructed with hemlock poles laid lengthways, two at the bottom and one over, leaving a hollow below, putting the hemlock bush upon the poles, and tramping the earth back upon them, this sort of drain will last half a century.

When stone cannot be conveniently procured, good drains may be constructed with narrow boxes or tubes of deal boards from four to six inches in the square ; holes bored at intervals in the sides. Such, when covered with two or three feet of earth, will last a long time.

To bring the draining of land to anything like a state of perfection, it must be studied as a science. The work should be completed in a substantial methodical manner under professed drainers and laborers employed in the execution of this special work.

It is well established that draining improves the climate as well as the soil ; that it is equally conducive to the health of beasts as of men ; that it gives an earlier harvest, and lengthens the summers by enabling us to turn our cattle out earlier, and keep them out later.

Drainage in wet, spongy and springy land also eradicates thistles and other weeds, and aquatic plants, and brings inert vegetable matter into action, even the news and scientific method of improving the crops by irrigating the land, would be almost useless without the earth be well prepared to receive the liquid, and the surplus and under spring water prevented lodging in low places, by under draining.

The practice of furrow draining, which is so extensively resorted to for carrying off the surplus water from the wheat crop, must be got rid of, and discontinued before our heavy clayed soils can be brought into a proper state of fertility ; the loss to the high table land which is consequent upon laying drains in the furrows in place of under drains, must be well considered. Farmers are as yet unacquainted with the perfect drainage which clay soils admit and require, and their attention has not been fully given to the loss their land sustains by the water running off the surface, particularly in high level clayed lands. But with the adoption of effectual drainage, and with a better acquaintance of the uses of rain and melted snow, the necessity of keeping the land in ridges by furrows will be proved no longer to exist, and agriculturists will become desirous of freeing their land of the impediments to cultivation and to perfect vegetation by under draining, and they will also see the importance of having the ground laid so that every drop of rain may sink into it, and the soil may gain additional fertility which its descent gives in leaving in the earth ammonia and other fertilizing properties brought down by the rain. Hence the higher level lands require under draining even more than low alluvial soils.

Experience has fully shown that covered drains are useful in making the ground between them porous, and the earth as it were a drainer, so that the rain and snow, when the land is thoroughly drained, sink perpendicularly where it falls, till it reaches the level of the drains, and is then hindered from accumulating upwards by the vents there given to it.

It is evident that under drains, when the land above them is well stirred or well fallowed, have a tendency by degrees to make the soil porous. This with the aid of capillary attraction always existing in the earth, will soon make all the land between the drains free and fertile. The distance between the drains is a matter of great importance, probably eight yards in the clear between each drain will be found in all respects the most advantageous.

WEIGHT OF THE DIFFERENT GRAINS AND ROOTS.

The Massachusetts Board of Agriculture, at a meeting a few days ago, received form Col. John N. Lincoln, of Worcester, a report on the weight of the different crops—understood to have been made after careful experiment and investigation. It is as follows ;

	lb.		lb
Corn	56	Carrots	55
Rye	56	Sugar Beets	60
Barley	46	Mangel Wurtzel	60
Buckwheat	46	Ruta Baga	60
Oats	30	Parsnips	45
Wheat	60	Bound Turnips	50
Potatoes	60	White Beans	60

THE EXPERIMENTAL FARM, ON THE UNIVERSITY GROUNDS AT TORONTO.

For the Agriculturist.

Observing a discussion in the Legislative Assembly on a grant of £500 to aid in bringing the Experimental Farm into operation, I think it a duty which I owe the public and myself, as well as the Board of Agriculture, to state a few facts relative to the progress of this farm, with which some of the speakers, on the occasion referred to, seemed unacquainted. Indeed, as one or two honorable members appeared to doubt whether anything had really been done by way of preparation, or rather positively affirmed that there had not, it may be desirable that I should state the history of the case, as briefly as possible, from the commencement.

The late Senate of the University passed a Statute appropriating fifty acres of the Park land, for the purposes of investigations and experiments in connection with the Professorship of Agriculture. As one of the objects of the Board of Agriculture, as defined by Statute, is the establishment of an Experimental Farm, the Senate placed the grounds thus appropriated, for a term of years, under the management of the Board, free of charge.

In the summer of 1852, improvements were commenced on about thirty acres of the land, which was in a state of nature, to begin with, wholly unproductive, with the exception of affording, during two or three months of summer, a poor and scanty pasturage; the surface was very uneven, and abounded in roots, stumps and stones. This portion was, after much labor and expense, brought into a tolerable state of cultivation, and the greater part sown to wheat, in the fall of the same year. This was done in the ordinary way, with a view to bring the ground into perfect order by degrees, and to procure some return. The crop was a good one, and the proceeds materially assisted in meeting the expenses. After the wheat came off, the ground was further improved and prepared for cropping the following spring, and some small improvements were likewise made on a portion of the remaining twenty acres.

In the spring of 1854, the probability was intimated that a portion of the ground assigned to the Board, would be required by the Government for public purposes, in order to carry out the proposed plans for erecting the new Parliament Buildings, University, Botanic Gardens, &c.

It was accordingly deemed expedient to restrict, for the present, preparations for Agricultural Experiments to the remaining twenty acres, or something less, occupying the north-west portion of the University grounds. This part was by far the most difficult and expensive to bring into cultivation, the greater portion being filled with a dense second growth of trees, so that little else than hand labor could be made available. Last spring preparations were commenced for bringing this portion of the grounds into a suitable state of cultivation, and a few acres were got into green and root crops, in the ordinary way. During the summer the necessary buildings were commenced, and a portion of the ground will be ready next season, for educational and experimental purposes.

It should be understood that the whole expense of these improvements is under the control of, and borne by, the Board of Agriculture; the grant of £500 by Parliament being intended to assist the Board in surmounting the difficulties necessarily incidental to a commencement.

I may say a word or two with reference to the distinction between a Model and an Experimental farm, since people are very apt to confound the two, as was the case with several Honorable Members in the debate which has given occasion for these remarks.

No single farm, however well managed, in an extensive country, where soil, climate, markets, &c., vary considerably, can be safely regarded as a model, by which all other farms should be conducted. Besides, the means and circumstances of farmers—particularly in new countries—are so very dissimilar, that what one readily accomplishes and makes profitable, might be altogether unsuited or beyond the reach of another. Every good farmer, who makes his business profitable, without impairing the productive capability of his soil, *has a Model farm for his neighborhood;* or, indeed, for every other place, *where all the conditions are similar.* Model farms, supported by the public purse, will not, in general, command the confidence of practical and business men, and they will be peculiarly liable to the charge of prodigal expenditure and theoretical crudities.

The Board of Agriculture, entertaining similar views, resolved on devoting the land, so liberally placed under their control by the University, to illustrative and experimental purposes only. It lays no claim whatever to be a Model farm, which would occupy a large space, and be attended with much risk and a great pecuniary

outlay; whereas, Experimental grounds may be restricted to a few acres, and it is believed that the space yet available to the Board may be made sufficient for the objects sought to be obtained. The annual outlay will be but trifling, after the necessary preliminary preparations are completed.

New and improved varieties of grains, roots, grasses, &c., will continue to be obtained from different countries, with a view to test their adaptation to the soil and climate of Canada; experiments will be made on their feeding qualities for cattle; also on the comparative value of the different substances used as manures, for educational and practical purposes; and the results as obtained will be published in the Quarterly Transactions of the Board. It is further proposed to distribute specimens of such productions, as are likely to suit this country, among Agricultural Societies, with a view to subject them to a wider test, under different conditions of soil and climate, before they are finally recommended for general cultivation. It is thought that the supplying of Societies with materials for more extensive experiments, under different conditions, will be productive of beneficial results.

It is much to be desired that the intentions of the late Government, respecting the University grounds, should be carried into full effect, by a judicious combination of the useful with the ornamental. Much has already been accomplished by way of preparation; and it is hoped that a Botanic Garden, in connection with suitable University Buildings, will soon be seen in juxtaposition with the Experimental Farm;—an ornament to Toronto, and an honor to Canada!

I shall always be happy to show parties, who feel interested in these matters, what is being done, if, when in town, they will honor me with a call.

GEO. BUCKLAND,

Professor of Agriculture, and Manager of the Experimental Farm.

University College,
Toronto, Dec. 29, 1854.

FIRST HORNED CATTLE IN AMERICA.—The first horned cattle brought to America were imported by Columbus in 1482. In 1750 the best dairy farms in Rhode Island contained upward of one hundred cows, and sold 13,000 pounds of butter in five months. Two acres of good land sustained one cow. The present number of cattle in the United States may be estimated at 20,000,000.

THE MONTHS—JANUARY.

The new year commences its career in the cold and dreary depths of winter, and is frequently introduced by biting frosts and driving snow storms; to which, however, the present season must be looked upon by us as a striking exception. The old year with its alternations of joys and sorrows, its hopes and fears, its gratifications and disappointments has passed away, and we have been permitted to enter on another of those important cycles of time, the diligent use of which is the only certain mark of human improvement.

JANUARY derives its name from JANUS, an ancient king of Italy, who after his death was deified by the Romans, and invested with attributes appropriate to one who was to govern the commencement of the year. The old Saxon name of this month was *Aefter-yula*, that is after Christmas in reference to the great festival of the Incarnation. The Saxon names of the months, however, have all been changed, while those of the days have been retained; but the reason for this distinction does not clearly appear.

Plough-Monday occurs about the beginning of the month, it being the first monday after the Epiphany, and was formerly celebrated in our father-land with much glee and merry-making by the rural population. It was so called to denote the duties of the husbandman in returning to his usual occupation after the festivities of Christmas. Ploughs and other implements of husbandry were carefully examined and repaired, and the plough was frequently carried or dragged around the parish for the purpose of soliciting plough money. In some of the more remote parts of England there yet remain traces of this and other ancient usages, having reference to the several operations of Agriculture. The climate of Canada, however, is so widely different from that of the British Isles, whence these customs originated at a very early period of their history, that no practical application could be made of our observing Plough Monday; except, perhaps, that if farmers now-a-days would thoroughly repair their old implements when the season wholly forbids their use, and have everything in readiness for the earliest commencement of operations in Spring, we should have our work better done and in proper season than is commonly the case.

The aspects of winter are usually considered to be monotonous and uninviting, and not a few

of them are commonly complained of as harsh and repulsive. In painting, this season is represented by a thin and bearded old man, shivering with cold; while the sculptor personifies it by one struggling to retain the garment which the furious blast threatens to tear from him. In the frozen north where the sun never appears above the horizon for weeks, or even months, and animal and vegetable life seem to be extinct, nothing can be conceived more dreary and forbidding. Yet even here a compensating power may be seen in operation, so as to render these inhospitable regions the abode of life and comparative enjoyment. The splendid Aurora renders the nights as light as day, and the thick mantle of frozen snow, from its non-conducting quality, prevents the escape of the heat still retained by the surface of the ground, thus affording a secure protection to both vegetable and animal life. In our own more modified climate, amidst the severities of the keenest winters, how much there is in the physical conditions in which we are placed, to awaken a sense of gratitude, to the bountiful author of nature, and to promote the growth of a kind and social spirit. Christmas and New Years' time is a season happily observed in Canada, as it is, or ought to be, in every portion of the christian world, by friendly greetings and neighbourly acts of goodwill and kindness. In the happy, domestic circle, where the scattered members of a family meet together with acquaintances and friends, and music and cheerful converse, and innocent recreations give wings to the happy hours thus devoted to the strengthening of the social ties of kindred and mutual good-will. The blue and sunny skies even of our winters, exert a charming influence over the mind and render this season of comparative leisure one of much social enjoyment.

Still, notwithstanding the friendly greetings and family festivities which happily characterise the close and beginning of each successive year, it must not be overlooked that at this inclement season there must necesarily be severe privation and suffering among such of the domestic animals, and the weak and indigent of our race, as are not properly cared for. The merciful man we are told is merciful to his beast; and the same high authority has pronounced a blessing on him, who considereth, that is befriendeth the the poor. This humanising sentiment so appropriate to, and it is hoped generally characteristic of the present season, has been forcibly described by the poet Burns, in the language of but a partially understood dialect, in a manner that has brought it home to the hearts of thousands:—

"Listening, the doors an' winnocks rattle,
Thought me on the ourie cattle,
Or silly sheep, who bide this brattle,
O' winter war,
And through the drift, deep-lairing sprattle
Beneath a scar.
Ilk happing bird, wee, helpless thing,
That, in the merry months o' spring,
Delighted me to hear thee sing,
What comes o' thee?
When wilt thou cow'r thy chattering wing,
And close thy e'e?"

The principal thing, therefore, which should now occupy the attention of the farmer, who, to be successful in his business, must be a considerate and humane man, is to give all his domesticated animals the necessary food and shelter, for their comfort and improvement. It is important to remark, in this connection, that liberality of treatment is perfectly compatible with the most economical management. The why and the wherefore of this will be treated of in a subsequent paper, when the phenomena and laws of heat will come more fully under consideration. No good farmer neglects to protect his cattle against the injurious influence of cold and wetness, and to prepare as large a supply of nutritious food as circumstances will admit. The best breeds, without strict attention to feeding and housing through the winter months, will necessarily deteriorate. And it should be remembered that these are conditions imposed by the great Artificer of nature, for the most beneficent purposes. Yet, alas, how frequently does ill-informed and obstinate man act in opposition to the wise and unalterable will of his Maker, in matters pertaining to practical science, as well as to morals!

The Canadian farmer, having his buildings tight and his stock properly protected, with sufficient provender, and a regular supply of that essential element—pure water,—with a blazing fire and a cheerful, well-ordered homestead, is in a condition, which the fury and inclemency of the outer-beating storm cannot affect, to diminish his domestic enjoyments. It is difficult to imagine a more enviable home than such a one possesses; particularly if he has acquired those mental and moral habits of character, which sanctify and ennoble the humblest lot. Truly the daily pursuits of the farmer are as innocent as they are useful; and to the observing, truth-seeking mind, they are equally friendly to the growth of useful knowledge, and the feeling of a rational and elevated devotion. What a source of pure enjoyment and ever-increasing

happiness would be opened up, if the cultivators of the soil would more earnestly follow their noble pursuit in the light of the natural and moral laws, which preserve, as a grand unity, the universe of God! Then, indeed, would agriculture be not merely the most useful, but also the noblest and the most innocent pursuit of man.

The present is the most favorable time for farmers to improve their minds, by reading and study. During other portions of the year, there is but little leisure for these things; and, for this reason alone, the young farmer should strive to turn the long winter evenings to a good, intellectual account. Happily now-a-days, and in this country, the want of suitable books cannot be pleaded, as an excuse for ignorance.

This is also a peculiarly suitable time for the farmer to settle his arrangements for spring operations. Implements should be decided on, and everything got in readiness for their execution when the proper season arrives. In short, the conducting of a farm, whether it be large or small, should be based upon order and system; so that every operation be performed at its proper time, and in the best manner. A systematic attention to the details of farm operations has an effect on the annual results of the business, which none can fully comprehend but such as have diligently practised it.

The following are "the twelve good properties of farming," as defined by the quaint old TUSSER, poet, gentleman, and farmer, of the sixteenth century:—

"Good farm and well stored, good housing and dry,
Good corn and good dairy, good market and nigh;
Good shepherd, good tillman, good *Jack*, and good *Gill*,
Make husband and housewife their coffers to fill."

PREMIUMS FOR AGRICULTURAL REPORTS.

The Board of Agriculture offer a premium of the value of £15, for the best Report, on each of the following counties:—BRUCE, SIMCOE and PRESCOTT. If such report be written by the Secretary of the County Agricultural Society of which it treats, the amount of the premium will be £20. This difference is made simply with a view to call out and encourage that useful and important class of officers.

These Reports, in addition to the usual information required respecting the condition of Agricultural Societies within their range, should describe the various soils of the county; modes of farming; value of land; amount of tillage and average of crops; breeds of live stock; implements and machines in use; methods of preserving and applying manures; sketch of past progress, with suggestions for further improvement. The manufacturing and commercial condition and capabilities of the county should likewise be stated, together with any other facts that would illustrate its past history or present condition.

All statistical information should be condensed as much as possible, and, when practicable, put into a tabulated form. The main object of each report should be to afford any intelligent stranger that might read it, a concise, yet an adequately-truthful view of the agricultural condition and industrial pursuits of the county. While all unnecessary particulars are to be avoided in the preparation of these reports, completeness should, as much as possible, be constantly kept in view. Such Reports as contain the greatest amount of useful matter, will be preferred; and it is recommended that they be made sufficiently comprehensive, so as to occupy at least 40 or 50 printed octavo pages. The Board will not award the premium to any Report, although it may happen to be the best sent in, unless it possess sufficient merit.

The Reports must be sent in to the Secretary of the Board of Agriculture, accompanied by a sealed note containing the name and address of the writer, on or before the 1st of August, 1855. Such Reports as obtain premiums will become the property of the Board.

TOWNSHIP OF CALEDON FALL SHOW.

The respected Secretary of this new and rapidly improving Society has sent us a lengthened statement of its first Exhibition, which appears to have been very successful. It is impossible to find space in the *Agriculturist* for even the shortest notice of the shows of our numerous Agricultural Societies; particulars of which are embodied in the Annual Reports sent to the Board of Agriculture, and will be published, we presume, in the contemplated journal and transactions of that body. We are glad to be informed that this norther portion of the county of Peel is progressing in a most satisfactory manner, and that the Horse's, Cattle, Sheep, and Swine, with the different kinds of grain and dairy products, were in general of excellent quality, and the prizes awarded were numerous and liberal. We heartily wish this promising young society permanent success.

THE CANADA FARMER.

The first number of this professedly new Journal is before us. On glancing over its pages, we thought it looked marvelously like the January number of the *Genesee Farmer*, and upon a little closer inspection, we found it to be identically the same publication,—paper, type, matter—all precisely alike,—with the single exception of the *name*, and about a page and a half of letter-press, chiefly of an advertising and puffing character. It is an American, *and not a Canadian*, publication, as its name imports, got up and printed in Rochester, and its very title is branded with deception and falsehood. The same trick was attempted at Cobourg last year, but not succeeding, we suppose, the publication has been now undertaken at Hamilton. We have too much of the spirit of *John Bull* in our composition to let tricks of this sort pass unnoticed. If our cotemporary of the *Genesee Farmer* desires a greater circulation in Canada, we should by no means object to it, if he employed fair and honest means for accomplishing his purpose. And we much misunderstand and overvalue the sound-hearted and national feeling of Canadian farmers, if he do not find in this instance, that the man who cannot regard honesty as a duty, will be shown that, at least, it is the best policy. There *was* a time when the *Genesee Farmer* occupied a high position for character, talent, and usefulness. But it was then in abler and honester hands.

RECENT SALE OF LIVE STOCK IN TORONTO.

Owing to an inadvertence no mention was made in the last number of the *Agriculturist* of the sale of Live stock belonging to a newly formed Cattle Company in the county of York. This stock was imported from England about a year since by Mr. Crew, of this City, who lost, as many of our readers will recollect, several valuable animals on the passage. We hope the price which he obtained for the remainder made up in some degree for the serious loss he sustained in so praiseworthy an enterprise. The following are the prices obtained at the sale, with the names of the purchasers:—

Durham Heifer	£170	0	J. P. Wheeler, Scarborough
3 Sheep (Improv'd Leicester)	75	0	H Parsons, Guelph
1 Ram " "	25	0	Wride, Scarborough
1 Ewe " "	20	0	" "
1 Do " "	18	15	Dickson, Richmond Hill
1 Do " "	17	10	Thorne, York
1 Do " "	12	10	Wheeler, Scarborough
1 Do " "	27	10	Parsons, Guelph
1 Boar " "	15	0	do do
1 Sow " "	14	0	Brown, W Gwillimbury
1 Do " "	14	0	Wride, Scarborough

THE PARIS WORLD'S EXHIBITION.

Our readers are already aware that a liberal sum of money has been voted by our Parliament for securing a fitting representation of Canadian industry at the approaching Exhibition to be held at Paris. A Central Committee has been organized in Toronto and Montreal, for Upper and Lower Canada respectively; and several Local County Committees have also been formed. It is proposed to hold an Exhibition in Toronto, sometime in February, for Upper Canada, for the purpose of selecting the best articles to be forwarded to Paris. The Central Committee have issued printed Bills, stating particulars, and requesting that articles be sent in by the first of February next. The time for preparation is now very short, but we trust that our farmers, mechanics, and others, will do their best towards sustaining a movement so important to Canada. The position occupied by this Colony at the World's Exhibition in London, in 1851, was of essential benefit to the Province at large; and if we do ourselves justice on the present occasion, and prepare for a high standing at Paris, the result will be equally encouraging and beneficial. We may further observe, that all articles selected for the Paris Exhibition, will be purchased at their full value, and their owners will receive whatever prizes or honors may be awarded them at Paris. Not a moment should now be lost. The Chairman of the Central Committee is E. W. Thomson, Esq., and the Secretary, G. W. Allan, Esq., both of Toronto.

DURHAM STOCK.

We call attention to Mr. R. Wade's advertisement of his fine young Bulls; which, judging from the well-known 'celebrity of his herd,' must be well diserving the attention of purchasers.

In our last we noticed that Mr. Chapman, of Clockville, Madison County, N. Y. had several Heifers of this much esteemed breed for sale.—Parties therefore desirous of obtaining Durham Stock of genuine purity, of either gender, may suit themselves either with Mr. Wade's or Mr. Chapman's.

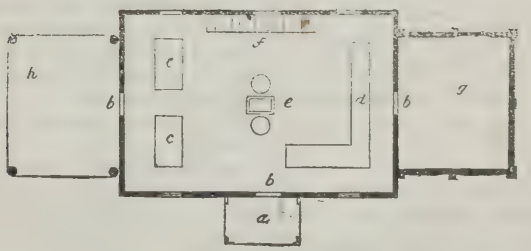
THE AMERICAN HERD BOOK.

Just as we were going to press Mr. Lewis F. Allen's Circular reached us. We are truly glad to find that there is some probability of his pursuing his useful labors, and will give our readers full particulars in our next.

DAIRY BUILDINGS.

Wherever the dairy is made an important branch of farm production, buildings for its distinct accommodation are indispensable. The dairy is as much a *manufactory* as a grist mill, and requires conveniences in its own peculiar line. A building, should therefore be set apart on purpose for its objects; and either for cheese, or butter, separate conveniences are alike required. We give in this number a design of a

CHEESE DAIRY HOUSE.



GROUND PLAN.

This building is one and a half stories high, with a broad, spreading roof of 45º pitch; the ground plan is 10 feet between joists, and the posts 16 feet high. An ice-house, is at one end, and a wood-shed at the opposite end, of the same size. This building is supposed to be erected near the milking sheds of the farm, and in contiguity to the feeding troughs of the cows, or the piggery, and adapted to the convenience of feeding the whey to whichever of these animals the dairyman may select, as both, or either are required to consume it; and to which it may be conveyed in spouts from the dairy room.

INTERIOR ARRANGEMENT.

The front door is protected by a light porch, (*a*,) entering by a door, (*b*,) the main dairy room. The cheese presses, (*c*, *c*,) occupy the left end of the room, between which a passage leads throught a door, (*l*,) into the wood-shed, (*h*,) open on all sides, with its roof resting on four posts set in the ground. The large cheese-table, (*d*,) stands on the opposite end, and is 3 feet wide. In the center of the room is a chimney, (*e*,) with a whey and water boiler, and vats on each side. A flight of stairs, (*f*,) leading into the storage room above, is in the rear. A door, (*b*,) on the

extreme right, leads into the ice-house, (*g*,). There are four windows to the room—two on each side, front and rear. In the loft are placed the shelves for storing the cheese, as soon as sufficiently prepared on the temporary table below. This loft is thoroughly ventilated by windows, and the heat of the sun upon it ripens the cheese rapidly for market. A trapdoor, through the floors, over which is hung a tackle, admits the cheese from below, or passes it down, when prepared for market.

The cheese house should, if possible, be placed on a sloping bank, when it is designed to feed the whey to pigs; and even when it is fed to cows, it is more convenient to pass it to them on a lower level, than to carry it out in buckets. It may, however, if on level ground, be discharged into vats, in a cellar below, and pumped out as wanted. A cellar is convenient—indeed, almost indispensable—under the cheese dairy; and water should be so near as to be easily pumped, or drawn, into the vats and kettles used in running up the curd, or for washing the utensils used in the work. When the milk is kept over night, for the next morning's curd, temporary tables may be placed near the ice-room, to hold the pans or tubs in which it may be set, and the ice used to temper the milk to the proper degree for raising the cream. If the dairy be of such extent as to require larger accommodation than the plan here suggested, a room or two may be partitioned off from the main milk and pressing-room, for washing the vessels and other articles employed, and for setting the milk. Every facility should be made for neatness in all the operations connected with the work.

Different accommodations are required, for making the different kinds of cheese, and in the fitting up of the dairy-house, no *positive* plan of arrangement can be laid down, suited alike to all the work which may be demanded. The dairyman, therefore, will best arrange all these for the particular convenience which he requires. The main plan, and style of building however, we think will generally be approved, as being in an agreeable architectural style, and of convenient construction and shape for the objects intended.

Good Remedies.—For drunkeness, drink water—for health, rise early—to be happy, be honest—to please all, mind your own business.

CANADA, AS NOW UNDERSTOOD IN ENGLAND.

How astonishingly has public opinion at home changed in regard to Canada within a very few years! Formerly this country was considered a frigid and inhospitable clime, adapted to none but the poorest and hardiest class of emigrants. Now we have men of capital, learning and science, constantly coming to our shores, who readily find a field for the profitable employment of their money or talents. This desirable change is doubtless the result of several combined causes, among which may be mentioned the improved and more stable character of our Provincial Legislation, and the publicity that has been given to carefully-arranged statistical information on the immense natural resources of this country.

We copied, a few months since, from the *Gardener's Chronicle*,—an influential paper published in London, under the able superintendence of Professor Lindley,—a very eulogistic article on Canada, founded on the admirably-written pamphlet of the able and indefatigable Secretary of our Board of Statistics, William Hutton, Esq., which that gentleman prepared and published when recently in England. The following is an editorial article of the *Gardener's Chronicle*, of October 28th:—

If we turn to a map of the New World, and cast our eyes to the north of the United States, a vast tract of land will be seen stretching north to the regions of perpetual ice and snow, and east and west across the whole of the immense continent of America. This huge territory contains more than four millions of square miles, more than 2,630 millions of acres, and is equal to about one-ninth of the whole terrestrial surface of the globe. Nay more, it owns the supremacy of our own Sovereign Lady Queen Victoria, and the British possessions in North America are open to the enterprise and energy of Englismen. If we examine a little more closely the south-eastern portion of the district in question, we shall find in Upper and Lower Canada a country with a healthy climate and immense resources, highly prosperous, and rapidly increasing in population and importance. The census of the Canadas, published last year in Quebec, furnishes the materials from which we select the following facts in support of this statement. We confine ourselves more particularly to such details as bear upon agriculture and gardening.

The two Canadas consist together of an area of 242,482 square miles and 155,188,425 acres; of these last 7,300,839 are occupied and cultivated. The population is 1,842,265; so that there are, or rather were in 1852, four cultivated acres to each inhabitant; 164,488 persons, or a little more than one-eleventh of the whole population, are returned as farmers, whilst only 141,949 are re-

turned as laborers; so that, even supposing that by laborer is always meant an agricultural laborer, there are actually 22,539 farmers more than there are laborers. This is in striking contrast with the condition of our own country. England and Wales, as appears from the census of 1851,* contain an area of 58,320 square miles and 37,324,915 statute acres. The population is 17,927,609; so that upon the whole there were, in 1851, little more than 2 acres to a person, or half the quantity which exists in Canada; indeed, even less than that, for the acreage of England and Wales, as given above, includes the uncultivated as well as the cultivated land. With respect, again, to our agricultural population, it appears there are in England and Wales 225,318 farmers, who employ 665,651 laborers; so that, instead of there being, as in Canada, fewer agricultural laborers than farmers, there are nearly three times as many of the former as of the latter. But from the list of occupations in the English census, out of the entire population of Great Britain, amounting to nearly 21 millions of persons, one million are set down as agricultural outdoor laborers; so that although, as compared with the farmers, the number of laborers in England and Wales is much greater than in Canada, still, as compared with the whole population, the reverse is the case, for here only one person in 21 is an agricultural laborer, whilst there one person in every 13 is so. We confess that we should have thought that there had been more than three agricultural laborers for every farmer in England and Wales; but, from a table in the English census, it appears that as many as 91,698 persons returned themselves as farmers employing no laborers, and more than 33,000 as employing only one; these large numbers of course materially affect the average.

Leaving agriculture for the present, and turning our attention to horticulture, we find that in Canada (Upper and Lower) there are only 421 gardeners and 42 horticulturists, florists, nursery and seedsmen taken altogether. In Lower Canada there are fewer persons of this description than in Upper Canada, and it seems somewhat surprising that except in Montreal and Quebec there should not be a single nursery or seedsman throughout the whole of the former province, and that for the same district only one person should be returned as a horticulturist, and absolutely none as a florist. When it is remembered that the area of Lower Canada is nearly 210,000 square miles, and that its population is 890,000 persons, it does seem strange that only 149, or 1 in a little less than 6,000, should be found making gardening and horticulture the business of their lives. Compare this with Great Britain. The population may be taken at 21 millions, and of this number 80,946 (we may say 81,000) are returned as gardeners, exclusive of 5,000 who are also domestic servants, and exclusive of 2,675 nurserymen and of 1,156 seedsmen. In England, Wales, and Scotland, therefore, there is one non-domestic gardener to every 260 inhabitants; or, in proportion to the population, 23 times as many as in Lower Canada. In Upper Canada there are both absolutely and relatively more gardeners, &c., than in the lower province; in the former, with a population of 952,000, there are 314 gardeners, florists, &c.; that is to say, there is one to every 3,000 inhabitants; or, in proportion to the population, twice as many as in Lower Canada. Canada is not the place for luxuries; in the upper province there are only 94 barbers and hairdressers, or one to every 10,000 persons; and in the lower province there are only 30, or one to every 26,000; on the other hand, if we turn to the useful and necessary branches of industry, we find 10,268 carpenters, 7,075 blacksmiths, and 8,967 boot and shoemakers.

The Canada census contains some very interesting returns relative to the agricultural produce of the country. From them it appears that in both provinces together there are 1,136,311 acres of Wheat, yielding in Upper Canada 16, and in Lower Canada 9 bushels per acre, and 13 and 3 bushels per individual respectively. There are nearly 78,000 acres of Rye, yielding on an averaage 11 bushels per acre; 329,755 acres of Peas, yielding in Upper Canada 14, and in Lower Canada 9 bushels per acre; 913,356 acres of Oats, yielding as before 26 and 20 bushels per acre; and 65,650 acres of Barley, yielding on an average 21 bushels per acre. Barley is the only crop which it appears from the returns is yielded in greater quantities per acre in Lower than in Upper Canada. Wheat is in the tables valued at 4s. the bushel; Rye at 2s. 6d.; Barley at 3s.; Oats at 1s.; and Hay at 40s. per ton. Horses are estimated at £12 10s.; milch cows at £3 15s.; oxen at £6; sheep at 7s. 6d.; and swine at £1.

A rapidly-increasing population is always admitted to be a sure sign of prosperity, and we cannot conclude the present article better than by the following facts relating to this subject. In the 10 years ending in 1851 the population of Great Britain increased more than 13 per cent., that of the United States more than 35 per cent., and that of Upper Canada more than 104 per cent. In the far west of Canada, the counties of Huron, Perth, and Bruce, increased from 5,600 in 1841 to 37,580 in 1851, being upwards of 571 per cent. in 10 years—an increase almost beyond comprehension. England has in the average 332 persons to a square mile; Wales, 136; Scotland, only 92; whilst Upper Canada has 29; Lower Canada, 4; and the United States, 16; so that the land even now occupied in Upper Canada would hold more than 11 times its present population, say 11,000,000 inhabitants, to be as densely peopled as England. In fact, about two-thirds of the population of London alone may be taken to represent the number of persons in all Canada.

In a late Number of the *Gardener's Chronicle* (June 3, 1854,) we ventured to say "that no part of the world now presents such undoubted opportunities of acquiring rapid independence as the British possessions in North America, and more especially Canada;" that opinion was founded more particularly on a pamphlet* then referred

* The Census of Great Britain in 1851; Longman, 1854. By authority of the Registrar-General.

* Canada; its present Condition, Prospects, and Resources. Stanford, Charing Cross.

to, and is amply warranted by the official returns contained in the report from which the above details have been taken.

HUTTON'S GUIDE TO CANADA.

We copy the following from the November number of "*The Journal of the Albert National Agricultural Training Institution, and Record of Industrial progress:*" an admirably got up monthly publication in connection with the Experimental Farm at Glasnevin, near Dublin :—

We hail the well timed appearance of this little volume with peculiar satisfaction; first, because we have the pleasure of knowing the worthy author, whose respected family reside near us, and are our frequent and welcome visitors; and secondly, because we have the fullest reliance upon the truth and accuracy of its details. No person will deny that much knowledge may be gained from the observation of intelligent travellers; and indeed without the aid of such enterprising men we should sit in comparative darkness respecting many portions of the world. But when we look for particulars to guide us in the selection of a *home*—then we naturally and anxiously seek for the latest, the most experienced, and the most practical authority; and after a pleasing and attentive study of this book, we feel assured we have found it in Mr. Hutton's *Guide to Canada.*

We have certainly felt frequent astonishment that among our own countrymen so great a predilection should be felt for emigrating to the United States in preference to Canada, and we believe that our admitted national prejudices have had some, and not an inconsiderable share in their decision. The idea of a more perfect enjoyment of liberty—the complete severance of monarchical ties—and the dislike to British authority across the Atlantic—may have influenced multitudes in ther choice, and may cause many yet to pause and doubt. But that these feelings have been shared by emigrants from other countries, or by the best informed among our own countrymen is certainly not the case, as will more decidedly appear on consulting the 4th chapter of this work, wherein it is shown (a due estimate of the size and extent of the two countries being taken into account) that the emigration from Europe to Canada during a period of 20 years, from 1830 to 1850, has been as 5 to 1 over that to the United States, and we believe the number of our own countrymen who, after landing in New York, ultimately pass over into Canada is very great.

We also know, and have frequent proof, that Canada is by far the healthiest country, and that the deaths among our emigrants to the United States are numerous and appalling. It is a known fact that multitudes suffer grievously in their health, and would fain return home had they the means to do so, particularly as their children are reared with difficulty. We ourselves know those who have come back and declared they would have been left childless had they remained. Now, so far from this being the case with regard to Canada, Mr. Hutton and his excellent and amiable lady, after an absence of 20 years, are in vigorous health, and we may add that their numerous family are the same.

Upon many other grounds we think highly of Canada, and upon none more decidedly than that it is a land of liberty and not of slavery. Many may say that the Northern *States* are exempt from the foul and disgraceful traffic in human flesh and blood; and so they are. But we cannot consider that even the Northern States, however glorious and estimable in other points of view, can ever be considered in the light of a perfectly free country, so long as they are bound down by the laws of their *own Union*, to assist, under heavy penalties, in the apprehension of suffering fellow creatures, whose only crime is the exercise of nature's dearest rights—escape from unwilling and most cruel bondage. It has been eloquently written, "disguise thyself as thou wilt, still, slavery, thou art a bitter draught." But America disguises nothing, and presents the "bitter draught" in all its hideous repulsiveness. Can there be a stronger argument in favor of Canada?

THE INDUSTRIAL ARTS.

MANUFACTURES OF IRON.

The manufactures of iron are of every imaginable shape and adapted to a thousand different uses. A brief description of the process by which some of the articles in common use are made, will no doubt be interesting to our younger readers. The process by which many of the coarser tools are manufactured may be seen in any common blacksmith's shop, but you will go there in vain to learn how to make a file, a pin or a needle.

FILES.—A file is a very important tool. They are as every body knows, of various shape, as flat, round, square, half round, three square, four square, and so on. They are all divided into two varieties, from the form of their teeth. When the teeth are a series of sharp edges appearing like parallel furrows, they are termed single cut; but when these teeth are crossed by a second of similar teeth, they are said to be double cut. The first are suited for brass and copper, and the second for the harder metals. Files have also different names according to their degrees of fineness. The heavier and coarser kinds of files are made from the inferior kinds of blistered steel. The finest kinds are made from the steel of the best Swedish iron, the bars of steel being selected according to the shape and use of the files to be made.

Files are made at a forge. The forge consists of fire-bellows, with coke as fuel. The anvil, one or more of which are sometimes set on the stone bench, is large, set in a large bench-like mass of mill-stone grit, and has a projection at one end, and a hole to contain a sharp-edged tool for cutting the files from the rods. It also contains a deep groove for dies and bosses.

The flat and square files are formed entirely by the hammer. One man holds the red hot bar, and strikes with a small hammer; another stands before the anvil with a two-headed hammer; the latter is in general very heavy, with a broad face for the large files. They both strike with such truth as to make the surface smooth and flat with-

out hard hammering. There are hammers of various sizes and peculiar shapes, and other small instruments at hand; there are various notches, ridges, curvatures, and guages on and about the anvils. When made into form, the files are then annealed or "lighted," in order to bring the steel to the state of softness fitted for the cutting of the teeth; next succeeds the process of grinding, by which a true and regular surface is given to the face of the intended file or blanks, as they are termed previous to the cutting of the teeth.

This is performed by a hammer and chisel; the hammers weigh from one to six pounds; the chisels are a little broader than the file, sharpened to an angle of about 20 degrees. The file is first laid upon the bare anvil, one end projecting over its front, and the other over its back; a leather strap now goes over each end of the file, and passes down upon each side of the block to the workman's feet, which being put into the strap on each side, like a stirrup, holds the file firmly upon the anvil as it is cut. The hammers employed have the handle placed in a remarkable manner with respect to the head, being adapted at such an angle that the cutler can, while making the blow, *pull* the hammer in some degree towards him, and thus give a peculiarity to the shape of the tooth. If the file is a flat one, the cutler places the small steel chisel with his left hand on it at a particular angle, and then with the hammer in his right, cuts an indentation; he then cuts another parallel to it, then another and another to the end of the file, shifting the file slightly in its fastening as he proceeds, and this he does with inconceivable rapidity. The double teeth are cut in a similar manner, one set of cuts crossing the other at an angle more or less acute. The cut is not a mere indentation made without reference to form; it is a triangular groove of particular shape, the production of which requires a discriminating tact in the management of both the hammer and cutting-tool, which can only be obtained by a long apprenticeship to the business; and which machinery, great as may be its powers, has hitherto failed to reveal. After the files have been cut, they are next hardened, and in this process three things are especially held in view—first, to prepare the file on the surface so as to prevent it from being oxidated by the atmosphere when the file is red-hot, which would take off the sharpness of the tooth—secondly, the requisite hardness has to be obtained—and lastly, the file has to be prevented from attaining the slightest bend or warping.

The first object is accomplished by laying a substance upon the file which, when it fuzes, forms as it were a vanish on the surface, defending the metal from the oxygen of the air. This paste is composed of common salt, ale grounds, and bean flour. The file is now heated by being held by the tank with a pair of tongs into a coke fire; when it is uniformly heated from the tank to the point of a cherry-red colour, it is suddenly quenched in the coldest water, being at the same time kept in a perpendicular position. Half round files are an exception to this rule, being quenched in a horizontal direction. This management prevents the file from warping. After the files are hardened, they are scrubbed clean with sand and water; and lastly, they pass into the hand of the fireman, who strikes the file gently on a piece of hard steel, and also rubs it from end to end; and from the sound he can tell at once, so great is his perception by long habit, whether it has the temper necessary to make a good file.

Manufacture of Needles.—It is scarcely necessary to say that needles are made of steel, and that the steel is brought into the state of fine wire before it can assume the form of needles. The needle-makers do not make the wire, but purchase it. Having obtained the wire, which is bought in coils in weight about thirteen pounds, in length about a mile and a quarter; it is first put under the guage to be tested as to its exact diameter; it is then carried to the cutting shop, where it is cut into pieces equal to the length of two of the needles about to be made. This operation is performed not by cutting them singly, but the workman takes about a hundred wires at once, grasps them between his hands, and then cuts them with a large pair of shears. These pieces have next to be straightened. This is effected by inclosing them within two iron rings, and placing them on a small furnace, where they are made red-hot; on being taken out in a glowing state, they are placed on an iron plate, and taking a long piece of iron or steel adapted for the purpose, the workman rubs the needles backwards and forwards, causing each needle to roll over on its axis, and also over and under those by which it is surrounded, till the action of one wire on another brings them all to a perfectly straight form.

Each of the pieces so manufactured is designed for two needles; the two ends constituting the points, and both points are made before the piece of wire is divided into two. The pointing immediately succeeds the rubbing, and consists in grinding down each end of the wire till it is perfectly sharp. They are ground on a small grindstone, and the needle-pointer takes fifty or a hundred of the needle pieces in his hand at once; he holds them in a very peculiar manner, and so nicely arranges his joints and fingers, that during the process of grinding every needle can be made to rotate on its own axis, by a slight movement of the hand, without any one needle being allowed to roll over the others. He grasps them so that the end of the wires (one end of each) projects a small distance beyond the edge of the hand and fingers, and these ends he applies to the grindstone, in the proper position for grinding them down to a point. The needle-grinders are the subjects of extreme pity. Their life is a living death. The particles of stone and steel pervading the air they breathe on every side, soon lays the foundation of disease on the lungs, called the "grinders' asthma:" it generally commences before they are five-and-twenty, and they linger out a miserable existence till about the age of thirty-five or forty, beyond that age very few dry-grinders are known to live. What a subject of reflection to those who seek to benefit the human race. It ought, however, to be remembered that the needle-grinders refuse to employ a mouth-

guard, which would to a considerable extent protect them from this injury.

The next process the little piece of straight wire undergoes is to pierce it near the centre of its length with two little holes, which are to form the eyes of the future needles. This is performed by a stamping machine, which consists of a heavy block of stone, supporting, on its upper surface, a bed of iron; and on this bed is placed the under half of a die or stamp. Above this is suspended a hammer, weighing about 30lbs, which has on its lower surface the other half of the die or impress. The hammer is governed by a lever moved by the foot, so that it can be brought down exactly on the iron bed. The workman, holding in his hand several of the pieces of wire, drops one at a time on the bed-iron of the machine, adjusts it to the die, brings down the upper die upon it by an action of the foot, and allows it to fall into a little desk when done. This he does with such rapidity, that one stamper can stamp four thousand wires, or eight thousand needles in an hour; or nearly a hundred thousand in a day.

The eye of the needle has now to be pierced through; this is effected by boys, each of whom work at a little hand-press. He lays them flat on a small iron bed or slab, holding one end of each wire in his left hand, and bringing the middle of the wire to the middle of the press, exactly under two hardened steel points; he then moves the press, the points descend, and two little bits of steel are cut out of the wire, thereby forming the eyes of two needles. The pieces are then "spitted" by the juvenile labourers, that is, a wire is passed through each of the eye-holes, and when the whole are spitted, they present the appearance of a double-toothed comb. A workman then files down the bur or protuberance left on the side of the eyes by the stamping. The comb of needles is next worked backwards and forwards till it separates, leaving a bunch of needles on each wire.

The needles are now put into the hands of the soft-straightener, generally a female, who rubs them, one by one, on a small steel plate with a curved steel bar; and so quickly in this process performed, that she can straighten thirty or forty thousand needles a day.

It is now necessary that the needles should be hardened and tempered. They are spread in regular thick layers on narrow plates or trays of iron, heated in a furnace, and then immersed in cold water or oil. To temper them they are placed on an iron plate, heated from beneath, and gradually brought to a proper degree of temperature. After this, they again undergo another straightening process, called hammer-straightening, which is performed also by females, who, placing them on a small steel block, give each a small blow in the right direction with a tiny hammer.

The next process is the scouring, which is effected in the following manner;—A strip of very thick canvas is laid open on a bench, and on this a large heap of needles, amounting to perhaps twenty or thirty thousand, is laid; all the needles being parallel one with another. They are then slightly coated with a mixture of emery and oil, and tied up tightly in the canvas, the whole forming a compact mass, about two feet long and two inches in thickness. Twenty-four rolls of needles being thus prepared, comprising nearly six hundred thousand in all, they are placed under the rubbers of the scouring machine; and steam or water power, with a connecting mechanism, gives to the rubbers a backward and forward motion, which causes the needles in each bundle to rub over each other, and, by the continued friction, they are scoured. This is carried on for eight hours, after which they are taken out and washed, placed in pieces of canvas, touched with emery and oil, and subjected again to the process, which is repeated for six or seven times.

The needles are next examined, and all the imperfect ones removed; the points are all turned one way, and the heads are next rounded off by means of grinding wheels as they pass to the polishing wheel, which consists of wood, coated with buff leather, of which the surface is slightly touched with polishing paste. The needles are held against the wheels as they revolve. About a thousand an hour can be polished by one man; and when they have been subjected to this process the needles may be called finished; nothing now remains but to put them up into small packets of twenty-five each, which is performed by children, and they are ready for the market.

Warranted not to cut in the eye. We remember once purchasing of a travelling hawker some needles so described on the outside of the wrapper, and upon opening it found the needles to have no eyes at all. Needles, however, are manufactured with this improvement, which consists of drilling the eye with a very fine instrument, by which its margin becomes as perfectly smooth and brilliant as any other part of the needle. This kind of needle is the pride of the modern needle-manufacturer.

ROBERT ABRAHAM LATE EDITOR OF THE FARMER'S JOURNAL.

(*From the Farmer's Journal, Montreal.*)

This Gentleman, who has conducted the *Farmer's Journal* from its commencement, and who gave in its pages such earnest evidence of his deep seated interest in agricultural pursuits, died in Montreal on the 10th November, 1854. Mr. Abraham was born in the fine grazing and agricultural county of Cumberland, where he first imbibed that fondness for the country and its pursuits, which show themselves so constantly in his writings, and which did not leave him until the breath of life had left his body, for according to one of his biographers, his thoughts to the very last, wandered among green fields, and beds of flowers cheated his imagination, as he descended the dark path which leads to the valley of the shadow of death. Mr. Abraham was originally a man of robust and herculean frame, and was famous as a young man for excelling in all the manly and athletic sports and exercises, which prevail in the rural districts of the northern counties of England. He took a Degree as Doctor of Medicine in the University of Edinburgh, and

practised his profession for sometime in Whitehaven. Subsequently Mr. Abraham conducted a political journal in that town,—he removed thence to London, and afterwards to Liverpool, where for many years he conducted with marked ability a leading newspaper. He came to this country about ten years ago, and was editor and proprietor of the *Montreal Gazette*, and afterwards edited the "Transcript" bisplaying great ability in the conduct of both journals. Mr. Abraham edited the *Farmer's Journal*, and his name and memory will be associated in the minds of our readers with many an admirable contribution to its pages. A few years ago, Mr. Abraham qualified for the profession of the Law in Montreal, and nothing can shew the wonderful versatility of his talents more, than the facility with which he mastered the details of his new profession. About two years ago, his general health began to fail. His mental powers had been overtasked, and symptoms of softening of the brain, and threatenings of paralysis appeared, to warn him that the time appointed for all men was fast coming to him. He died on the evening of Friday, Nov. 10th, leaving a widow but no children. He was a man of genial habits, enlarged heart, and kindly feelings, and is much regretted by those who knew him best.

☞ Apology.—We regret to find, when too late to remedy the evil, that our *paper* is again of an inferior quality. We ordered good paper, and pay a *good* price for it, but we are imposed upon, and cannot help ourselves.

TRANSACTIONS OF THE NEW YORK STATE AGRICULTURAL SOCIETY, FOR 1853.

Another large and instructive Annual Volume of this numerous and influential Society has been received just as we were going to press; for which the able and esteemed Secretary, B. P. Johnson, Esq., will please accept our best thanks. Judging from a hasty turning over of the pages, this volume, in the interest and variety of its subjects, appears in no way inferior to its predecessors,—which is no slight praise. We shall notice it more fully hereafter.

THE ANGLO-AMERICAN MAGAGZINE; JANUARY 1855; TORONTO; MACLEAR & CO.

This is the first number of a new volume of this excellent *Canadian* periodical,—namely the sixth;—offering therefore a good opportunity to new subscribers patronising this work,—the present number contains three well executed plates,—a portrait of General Sir John Cope Sherbrooke; the Parisian Fashions for the month; and a Plan of the British American Forces below New Orleans, on the 8th of January 1815;—illustrating the History of the American War; which, after occupying several pages of each number of the magazine for the last two years, is now brought to a conclusion. The contents and "getting up" of this instructive and amusing Miscellany, being in its literary and mechanical execution essentially a *Native production*, has a strong claim on the patronage of all our British American fellow subjects:—and we trust that the enterprising Publishers will speedily meet with that high degree of support which their enterprise and perseverance highly deserve.

CHAMBER'S JOURNAL OF POPULAR LITERATURE, SCIENCE AND ARTS; PARTS 10 AND 11; TORONTO: A. H. ARMOUR & CO.

This cheap and instructive periodical continues to maintain the position which it has so long occupied. It is admirably adapted to a rapidly increasing class in all countries where the English language is understood, (thanks to Popular Education) to afford the millions of all classes of society, with rational amusement and solid instruction. The Edinburgh Edition can be supplied in monthly parts by Mr. Armour of this city, and the principal booksellers throughout Canada, for the very moderate charge of $2 per annum.

CONTENTS OF No. 1.

	Page.
A New Invention—Steam Power Superseded	14
Allen's American Herd Book	24
Agriculturist Almanac	32
Canada as now understood in England	26
Dressing for Sweedish Turnips	18
Durham Stock for sale	24
Dairy Buildings—Engraving	25
Experimental Farm, Toronto	30
Editor's Notices	31
First Horned Cattle in America	21
Guelph Farmers' Club—Fall and Spring Ploughing	7
History of Steam Plough	14
Hutton's Guide to Canada	28
Industrial Arts, Manufactures of Iron	28
Meeting of the Board of Agriculture	9
Mr. Mark's Views on Draining	19
New Steam Draining Plough	12
Nitrate of Soda as a Manure	17
Professor Buckland's Report	11
Premiums for Agricultural Reports	23
Paris World's Exhibition	24
Report of W. Hutton on British Agriculture	15
Robert Abraham, late Editor of the *Farmer's Journal*	30
Sale of Live Stock in Toronto	24
The Months—January	21
Township of Caledon Fall Show	23
The *Canada Farmer*	24
Vegetable Physiology—Essay	1
Weight of Grains, and Roots	19

STALLIONS FOR SALE.

THE Subscriber now offers for sale TWO VERY SUPERIOR STALLIONS, one will be six years old next May. he has taken nine premiums; took the first in Toronto, at the Provincial Show, 1852; the other will be four next June, he took the second in Hamilton at the Provincial Show, 1853. They were both sired by the far-famed old Clyde. who, when he was on the sod far surpassed any horse that ever came against him. Their dam is a very superior Mare. For further particulars apply to the subscriber

WM. WADDELL,
Pickering, Claremont P. O., C. W.

Dec. 16th, 1854. 1-3

The Canadian Agriculturist Almanac for 1855.

Months.	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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THE

CANADIAN AGRICULTURIST,

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture, Horticulture, Farm Mechanics*, and to the advancement of the *Farmers' interests generally*. It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c. and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, besides Editorial and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributers to this journal

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production*, and asks no man's support under a false name. It is a true, not a spurious *Canada Farmer*.

TERMS:

Twenty copies or upwards, each ..... 2s. 6d.
Single copy ..... 5s.

*** The *Agriculturist* is not liable to *Postage*.

☞ Newspapers inserting the above will do us a favor, and entitle themselves to a copy without exchange.

WM. McDOUGALL,
Publisher, Toronto.

January, 1855.

Months.	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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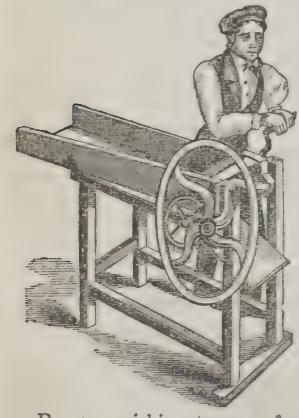
JOHN BROWN'S

PATENT STRAW-CUTTER



IS now offered for Sale at McINTOSH, WALTON & Co.'s Yonge-street,—price Twenty Dollars. To prove its preference it is only required to test its work and durability. The castings fit so as one rod secures the whole together, and can be placed on the frame (a plain one) secured by two bolts, without anyfurtherfitting or any possibility of its getting out of gear or order.

Persons wishing to manufacture them can have any reasonable trial required.

For Patents apply to

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126 *Yonge Street, Toronto.*

☞ AGENT FOR PATENTS.

Toronto, December, 1854. 1-4m

JOHN BROWN'S

PATENT SEED-SOWER

WILL be found for sale at McINTOSH, WALTON & CO'S., Yonge-street, price five dollars. Sows Clover or Timothy Seed broad-cast, ten (or more) feet with any required quantity per acre. Also without any alteration will sow Turnip Seed in rows—can be set to any distance apart—can be used no matter how rough or stumpy the land—will be more convenient and expeditious for either Broadcast or Rows than any other mode. Parties wishing to manufacture can have any reasonable trial. For Patent, Apply to

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126 *Yonge Street, Toronto.*

Toronto, December, 1854. 1-6m

SHORT-HORN BULLS.

R. WADE, JUNIOR, of Cobourg, has Five Young DURHAM BULLS for Sale, and would be glad of a call from parties wishing to purchase.

Cobourg, January 1, 1855. 1-3

THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VII. TORONTO, FEBRUARY, 1855. No. 2.

Agriculture, &c.

TOWNSHIP OF YORK FARMERS' CLUB.

ESSAY ON MANURES.

At a meeting of the Club, held on Wednesday, the 6th of December, at Daw's Hotel, on the Kingston road, Mr. William Lea read the following Essay on Manures:—

Mr. President and Gentlemen,—At the request of several members of our Club, I have endeavored to produce an essay on some parts of practical agriculture, and I am not without the hope that it contains matter worthy of your best attention. My own information on chemical subjects is too limited to admit of my advancing any doctrine not supported by the highest authorities. The efforts I have made to produce this essay have been useful to myself; for nothing is more calculated to make us *learners* than the effort to become teachers. The subject of manures is of paramount importance to the farmer. He may drain, plough, harrow, sow, may proceed on the most approved principles; but unless he make to the soil an adequate return in manure, for that which he takes from it in the form of crops, he will discover to his cost that, in omitting to manure his land, he has been violating a fundamental law in agriculture, and that his former profits will not compensate him for the injury which he has been inflicting on his land, and the losses which such omission, or mistake, cannot fail to entail upon him.

Of so little value was manure to the early settlers in some parts of Canada, that we are informed that farmers were in the habit of removing, by the assistance of their neighbors, their outbuildings from amidst the accumulation of manure that in a few years had grown about them—such a proceeding being deemed less troublesome and expensive than that of carting away the valueless and offensive matter,—and such was the fertility of the soil around them, that we cease to feel astonished that, when farmers were forced to remove their manure, it was in many cases deposited on the ice, that it might, when a thaw came, be swallowed up by the deep water. But these days have passed away, and the enlightened cultivator of the soil has discovered that no land, however fertile and vigorous, will long continue to bear the drain of successive crops, but that Mother Earth, justly called Nature's best Bank, must have her vault replenished by deposits of nutriment proportionate to that which she has yielded. But, though manure is no longer regarded as a valueless obstruction, still it is in but too many cases deprived of much of its value by the waste to which it is subjected, and it is to such waste that I beg leave to call your attention, in the hope that what I have to say on the subject may not be without value to some one or two at least of my auditors.

The waste to which I allude is of two kinds; first, general; next, local. By general waste is implied the loss of the fluid which rich manures yield so freely—loss which results either from its being drained off and suffered to ooze away in sundry small channels into hollows, and places where it can be of no use; and, secondly, by the gradual evaporation of these juices, from inattention, and the want of a proper place for the deposit of manure. Now, it has been clearly

ascertained that manure suffered to run dry in the manner referred to, loses by far its most valuable constituent, which is the urine of animals, yielding an aid which forms one of the most important elements in the food of vegetables.

It is an invariable law of nature, that nothing —no form of matter—is what may be called thrown away—nothing is lost—every portion of matter having its proper value and use in the economy of the universe.

All animals and vegetables that have existed have become decomposed, and have entered into the formation of succeeding vegetables and animals. Man should take a lesson from this great fact, and should let nothing that his industry, or the natural fertility of the soil he cultivates, produces, become profitless. Every portion of matter should be husbanded with care, for, soon or late, under proper management, it will amply repay the care devoted to it. My own intercourse with farmers is rather extensive, and I regret to say that in few or no cases have I seen anything like proper arrangements made for the deposit and preservation of manure, and particularly of the valuable juices above mentioned. In most cases the manure is so placed that one would almost believe that the object was to drain it as dry as possible—to suffer its most valuable part to dribble into small pools—soon to evaporate and dry up—or to find its way into the ditch —there to poison the air, and to engender disease, instead of creating wealth.

The following is a brief description of the arrangements which would obviate the waste and loss referred to—arrangements which I have endeavored to carry into effect on my own farm :

The cattle yard should be about 100 feet long, by 80 feet wide, and it should be enclosed on the north and west by the barn and cowsheds. The centre of the yard should be slightly concave, so that the liquid draining from the manure feeds a receptacle in the centre, and affords a fit deposit for dry matter, such as straw, peas, haum, &c. Any surplus moisture that may gather in this hollow is conveyed by a drain into a tank, in which there is a pump, so that this valuable fluid may be conveyed by a spout to any adjacent spot for making liquid manure compost,—to be described farther on,—or to be applied as circumstances may require. All the buildings should have spouts so arranged that the water may be conducted to or from the farmyard at option.

And here I must take leave to present to you a few observations on the importance of having buildings furnished with spouts in the manner mentioned, and of providing water cisterns, particularly in situations where the supply of water is liable to be deficient occasionally. The following extract, from the New York *Cultivator*, affords the readiest mode of informing you on this point:

"The great mass of country residents seem to have no more conception of the floods of pure, clear rain water, which flow annually off the roofs of their dwelling houses, sheds and outbuildings, than if they had never heard of those huge watering pots—the clouds in the sky. If all the rain which falls in the Northern States, within a year, were to remain on the surface of the earth, it would form an average depth of about three feet. In the Southern States it would be more than this; in the American tropics it would amount to about 10 feet; near Bombay (Asia) 25 feet. Every inch of rain that falls on a roof yields two barrels to every ten square feet, and 72 barrels are yielded by the annual rains in this country (Canada) on a like surface. Consequently, a barn roof 40 feet by 30 yields annually 864 barrels of rain water, being over two barrels a day. Thus, the amount of water placed at the service of the farmer increases in a corresponding ratio with the extent of his roofing. The value of such a supply it is needless to dwell upon. Only a very small part of the water that thus falls can be contained in the miserable cisterns and tubs in common use. Cisterns adapted to hold the needful portion of water we know not where to find. It is true that where a frequent demand is made on a cistern it need not contain anything like the year's supply; space for a sixth part of it would suffice, for the variations in the wet and dry periods of the year do not amount to more than the rain of two months."

The above extract shows clearly the vast benefit derivable from the proper spouting of roofs, and the establishment of capacious cisterns, not only for securing a constant supply o soft water, but to prevent the literal washing away from manure that part of it which is best calculated to promote the growth of plants.

The sewage, or refuse, running off from the interior of the dwelling house, should be preserved with the greatest care; all the waste water of the kitchen, which, in many cases, contains a great deal of animal matter, should be conveyed by pipes into the garden, for the purpose of watering it, and not the least portion of the house sewage should be suffered to run to waste.

The second description of waste often taking place on farms, results from leaving animal and vegetable matter lying here and there in the

fields, much of which matter, properly collected, being of very great value; for decayed weeds, grass, stubble, leaves, ditch and pond scourings, sawdust, ashes, matter having once had life, become the material for producing future life.

The animal matters, such as flesh-blood, and house sewage, are extremely rich in nitrogen, and carbonic acid; and the scourings of ditches and ponds usually contain some decayed or decaying matter, or have some portion in them of the inorganic constituents of plants, such as salts, or other mineral substance, rendering them valuable as absorbents of manure, or for mixing with substances which are either apt to ferment too rapidly, or are too powerful in their action upon plants to be used without being mixed with substances of a less stimulating nature. In short, there is no refuse matter on the farm, however contemptible it may appear to the uninstructed eye, that does not contain the elements of future vegetable life, and which is therefore as capable of being made into as valuable a compost as that which is yielded by the immediate farmyard, if subjected to the proper process.

And here the use of Gypsum, or Plaster of Paris, or, in its absence, Lime or Chalk (articles but too scarce in this locality), is strongly recommended, in order to fix the ammonia, which usually escapes from manures, whether solid or liquid, into the atmosphere, producing the effluvium of the farmyard, or other places where manure lies, such as fowlsheds, pigsties, &c., which is so offensive and so injurious to human health, and even to the health of the animals that inhale it. For even a slight sprinkling of gypsum, lime, or chalk, acts as an absorbent of the valuable ammonia, and takes it away, or rather prevents it from entering into the atmosphere, so that whenever an offensive smell is found in or near the farmyard, the fact seems as a notice that the valuable ammonia is escaping, and with it is departing more or less hard cash from the farmer's pocket; for such must be the result of the damaging process through which the manure is going whenever it gives rise to offensive odors. There is no necessity that any department of the farmyard, cowshed, stable, fowlhouse, pigstye, or manure heap, should give forth an odor offensive to the most delicate sense of smell; on the contrary, a sweet and grateful effluvium—or at least an inoffensive smell—should pervade the farmyard.

Gypsum, chalk, and even lime, being out of the reach of many farmers, it may be well to notice some of the artificial deodorizers which form substitutes for the natural absorbents of ammonia.

One pound of green copperas, dissolved in one gallon of water, and sprinkled with a watering pot over stables, cowsheds, &c., affords a deodorizer of great power. Sulphuric acid is mentioned as not being so cheap as this solution, but nothing is said of the mode of using this acid.

From what has been said it will be obvious,

1st. That the drainage of the farmyard should be to its centre, so that none of the fluid oozing from the manure, whether generated in it, or descending on it from the spouts, or in rain, should be suffered to escape;

2ndly. That the dwelling house sewage be conveyed in pipes to this common receptacle of every kind of fertilizing matter created by the deposit of both animal and vegetable substances;

3rdly. That gypsum, lime, or chalk, or some of the artificial absorbents of ammonia, and consequently preventives of bad smells, be sprinkled on dung heaps, and in the sleeping houses of the animals, for by such means alone can the escape of the very essence of manures be prevented. It may now be added that when liquid manure is seen to accumulate so as to form pools, it should at once be drawn off, and conveyed to the land as speedily as possible.

The practice of using liquid manure is advancing rapidly in England. The following passage from a modern work on husbandry shows the light in which this plan is now viewed by authorities:

"I have no doubt whatever but that fifty years hence nearly all artificial manures will be applied in a liquid form, as I think it will be found that, in point of economy of material, cheapness of conveyance, and the rapidity with which it will act, the system of using manure in liquid will be found superior to all other modes."

It is obvious that manure, in a fluid state, sinks at once into the ground, and, coming in contact with the roots and their spongeola, is at once taken up by the plants—at once becomes their food; whereas masses of solid manure, even when fully decayed, lie long on the surface, when not ploughed in, lose much of their value by evaporation, and often are scattered about and wasted. I cannot conclude this part of my subject without pointing out the importance of attending to the question of time, in relation to the retention of manure, whether

solid or liquid, in its receptacles. The heat engendered in manure heaps, if allowed to continue beyond the proper time and the proper degree, may be said to burn up the manure—a state to which the term "fire fanged" has been applied.

Liquid manure will invariably evaporate if allowed to lie too long. The exact time which either should lie in the receptacles cannot be exactly stated. It varies according to the material, the aspect, the season. In these respects the farmer must exercise his observation, and learn from experience when the proper time arrives for feeding his land with wholesome, and not exhausted, over-baked sustenance.

I can say but a few words on the mode of conveying liquid manure from the tank to the field. This can be done only by pipes of clay, wood, or iron, to, or as near to the place requiring the process as possible. Wood, in this country, is the cheapest, and, on the whole, the most advisable. It is obvious that the tank or tanks should be so situated as to afford some degree of elevation above the fields most likely to require this kind of manuring. The following mode of making liquid manure composts is given in the *Journal of Agriculture* for January, 1845, and I beg here to observe, that this and similar publications should be on the table of every person aiming at scientific agriculture; and such agriculture alone can be profitable:

"The attention of the agriculturist has of late years been more directed to liquid manure, and to the mode in which it may be most beneficially applied to the soil. The advantages derivable from it have been more or less insisted on by various farmers, according as its effects have been exhibited, success which will vary according to the manner in which the manure is applied to the soil, to the nature of the soil itself, and to the kind of crop it was intended to affect. The writer (Mr. J. Lawson, of Elgin,) has sometimes applied it to the soil in a manner differing from the usual mode; and, as the benefit he has derived from his mode has been considerable, while the mode of preparing it and the attending expense have effected great saving—the application also being much facilitated—he will here communicate the process he has adopted. Having your farmyard provided with a liquid manure tank, erect a shed convenient to it, but outside the fence of the cattle yard. In this shed should be the materials to be acted upon by the liquid, which is to be conveyed in pipes from the tank to this spot. The shed preserves the materials from rain, and a wall of stiff clay has to be placed so as to confine the liquid, and prevent waste. This clay barrier should be about eighteen inches in height. The materials for forming the compost should consist of 30 bushels of coal dust, that is, the earth from the bottom of an old coal pit, where charcoal has been made, or clay slightly burned may be used in place of this, either material being perfectly dry. To this add 3 or 4 bushels of ashes (quere, wood or coal ?), half a barrel of plaster of Paris, and where the land is deficient in lime, one barrel of this substance. These materials are to be put in the reservoir under the shed, and well mingled. The tank being now filled with liquid, it is every now and then pumped over these materials until they are perfectly saturated with the liquid. In these proportions the compost may be made to any extent. To every 25 or 30 bushels of the compost add 1 bushel of bones, dissolved in diluted sulphuric acid—this addition being made a few days before the compost is applied to the land. The bones are thus dissolved:—To each bushel add 22 lbs of sulphuric acid, diluted with 44 lbs of water; put this dilution into a wooden vessel; then add the bones; let the whole remain in the cask for 24 hours, stirring as frequently as is practicable. It is applied in the following manner to turnips:—The drills, being formed in the ordinary way, should be partly levelled by a single shake of a very light narrow; the compost is then sown by hand in the bottom of the drills, at the rate of 25 or 30 bushels to the acre, and covered in with the plough, which again forms drills; the turnip-seed is then sown on the top of the drill in the usual manner. Should the manure be too moist to be handled, the addition of some dry earth will remedy this difficulty. For Indian corn, one handful to a hill or drill will be sufficient. It may be applied to potatoes just as to turnips, with the exception that the sets should be put into the drills before they are turned back with the plough, to cover the manure. This compost makes a good top dressing for clover, or for grain crops, sown broadcast over them in the spring, at the rate of about 30 bushels to the acre. The time occupied in making this compost is very short, and the work may easily be done by the farm servants. Where the charcoal dust cannot be got—and it is the best—the clay may be burned in a small temporary kiln. On a farm of 200 acres, as much manure may thus be prepared from the surplus drainage of the cattle yards in a season, as will be sufficient for 10 or 12 acres. The cost, exclusive of the labor, of preparing this compost, may, for one acre, be stated as follows, viz:

½ barrel plaster	3s.	0d.
1 " lime	2s.	6d.
1 bushel ground bones	1s.	10d.
22 lbs sulphuric acid	9s.	2d.
Making	16s.	6d."

As in part connected with this subject, it may be mentioned that where bones dissolved in sulphuric acid are applied to land, they become more easy of application by being mixed with burned earth, in the proportion of 4 bushels of earth to 1 of bones. They may in this form be

applied in a dry state instead of a liquid by means of the water cart.

Farmers are very much opposed in general to trying experiments. You might as well tell them that gold dust was the best manure for their farms, as to tell them of any new experiment. They would be afraid it would cost more than they would gain by the operation. I will quote an experiment, stated by Professor Henslow, not to prove to you that these things are really useful, but this may show that there is something in it worth attention. "A patch of land without manure produced nine coombs of barley per acre; another portion of the same land, of similar dimensions, manured with liquid manure, produced ten coombs; and a third portion of the same, manured with liquid manure, in which the ammonia had been fixed by a little sulphuric acid, was increased four coombs an acre." You may say there is a mistake in it,—I do not say there is not,—but I think it shows you that you ought to try these experiments a number of you together, and you would arrive at the true results in a shorter time. The following owe their origin to the perusal of a very interesting essay by Mr. Towers. The subject of manure appears to be inexhaustible; it has been treated of by men of the first order of science, and examined in all its bearings; while the merely practical farmer has gone on in the ordinary routine, applying decomposing substances to the land, which experience has taught him, as well as the most inquiring philosopher, to consider the pabulum of vegetable life, the restorer of land deteriorated and impoverished by vegetable crops. Of late years the theory of nutrition, by the absorbent powers of the leaves, has rapidly advanced, and we are told by some that 19-20ths of the nutriment of plants are assimilated or imbibed by their leaves. However true this theory may be, may we not be allowed at least to simply doubt its accuracy? But we will drop this subject, and take another, which is established upon far more certain evidences—the ordinary manure from well-fed, healthy cattle,—to which an abundant supply of good food is given, the animals being also supplied with a sufficient quantity of litter to absorb the excretion. An important question here presents itself—What is the best state in which manure can be employed—is it better to allow it to ferment, or to lay it in the land at once? Most practical farmers will say, O! there is nothing like a good rotten dunghill; keep your dung in a hollow place, where the water will lie round it, and have it dripping out of the cart as you cart it into the field. Very good, no doubt, but let us look a little closer into the facts, as they are presented to our view. To answer this question, the component parts of dung coming fresh from the stable must be understood. This fresh manure is a gross mixture of straw and other vegetable refuse, which have been used as litter, with the solid excrement and urine. Fresh manure which has undergone scarcely any fermentation contains the following substances:

Water	75 parts
Soluble vegetable and animal matter and salts	5 "
Insoluble matter and insoluble salts, vegetable fibre and straw	20 "
	100

Reduced by long fermentation to black "spit," dung manure, according to Boussingault, contains—

Water	72-20
Organic soluble matters and soluble salts	1-50
Insoluble " " "	10-27
Straw converted into peat	12-40
Finely divided peaty water	3 63
	100

Here the water is decreased by 2-30 parts in the 100, but the vegetable matter is changed to the condition of what is termed "peat," or "humus," a substance which is formed by the extraction of very old vegetable masses, which is supposed to form the prepared food of plants. Take a cupful of the brown liquid which floats abundantly to waste in every large yard (I think I may safely say) in this township, put it into a deep glass vessel, and stir into it a small quantity of powdered quicklime, let it settle, and then stir in a little more lime, and thus proceed until the liquid has lost its color and become almost clear; or to prove more conclusively, take muddy rain water, and stir in lime as before until the water becomes of a pale, clear hue. The lime has combined with the humic extractive, fixed it as an insoluble humate, and in a condition to be acted on by soil, or by the roots of plants, by slow degrees.

Thus, then, lime is a corrector,—one which combines with, and fixes redundant vegetable matters,—or at least that portion of it which is in any degree soluble in water, or in the solution of soda, potash, and ammonia; and by the substantiating of this great fact, the fixture of the

nutrimental quality of the humus, and humic acid, which flows from our dunghills, has been proved, and established upon philosophical principles. If it be admitted that lime acts beneficially upon surplus vegetable matters, chiefly by the paramount affinity which it possesses for humic acid, the advocates for a very moderate degree of fermentation in the masses of dung, acquire a strong position, since it is obvious that a protracted fermentation terminates in the production of a cold humus mass, which consists of little else than black carbon, effete inorganic matters, and the said humic acid, soluble in the saline alkalies, but fixable by the action of lime. But, independent of the final conversion of manure into a substance replete with a matter injurious to crops, amounting to at least one-fourth;—observe, for instance, fresh dung that has been drawn out into a field, and thrown into a heap to rot, as it is called, and allowed to ferment without a covering of earth, or anything to fix the ammonia, which is constantly escaping during fermentation, or count the loads, and you will be surprised at the decrease in quantity, and the decrease in quality is equally great, if not greater. I will now give you a description of a plan, practised in Norfolk, for making a manure heap: many agriculturists are acquainted with it, but some of you may not, and may perhaps feel curious about it. It has obtained the name of the "Norfolk Pie." "The custom is to carry out all the manure made in the separate yards during the winter, as opportunity may offer, into the fields intended for turnips, calculating the quantity at ten loads per acre. In the first instance, a platform of earth is made to receive the manure, and then a proportion of cow dung is cast over it, which is considered the weakest manure, upon that pig, which is held to be the best; then some from the store and fold cattle, followed by horse hung, and then more of the pig's, always compressing the heaps by casting over it. Then plough round the heap, and throw a light coat of earth over the top and sides, to keep it from fermenting. It remains in this state to within a fortnight of sowing the turnips, when it is turned over, and in its fermented state it is put into ridges of 27 inches, the ground turned over it by the plough, and the seed sown immediately after." This method of preparing a mixen produces a certain degree of fermentation, while it tends to confine the gases that are extracted, producing also that slight degree of internal action, which Mr. Gerardin alludes to, as required, in order to "destroy the cohesion of the vegetable fibre, predisposing it to a decomposition and solution, which is useful to manure before spreading it on the land." But, like all other attempts to regulate a movement which is always progressive when once excited, it is subject to great uncertainty. Every vegetable, and animal substance, deprived of the vital principle, is from the same moment brought into a state of decay, or slow combustion; and when with such substance we combine others, replete with nitrogen, with fecal and urinous excretions, all blended together, more or less, in straw yards, stables and cow-houses, and, of necessity, requiring a lapse of time, and exposure to varying atmospheric influences, it will be evident that no two compressed, or other compound masses as above described, can be expected to become exactly similar in any given number of days. In the essay the evidences of Thaer, Schmalz, Hassanfrabz, &c., have been appealed to. The chemist last named, it is said, "manured two similar lands, one with long dung, in which the straw had only commenced to putrify, the other with perfectly decayed manure, capable of being easily cut with the spade. These two lands were cultivated in same manner; the second produced larger, stronger, and more vigorous plants the first year than the former; but the second year, when neither was manured, the former produced larger, and stronger, and more vigorous plants the first year than the former; but the second year, when neither was manured, the former produced larger and stronger crops than the second; the third year the former still had a slight advantage over the latter." "An experience of more than seven years," says Picket, "has convinced me that we shall be great gainers by using manure as soon as it comes from the stables." "For six years," observes M. de Roublesdorf, "I have followed these principles on the farm I cultivate. With the single exception of sheep dung, all the others were conveyed to their destination and spread, even when the land was covered with snow, as soon as they were taken from the stable. It is to this circumstance that I attribute the good state, continually increasing, of my land, as regards manure." My own practice has been, and I am decidedly in favor of it, to take out all the manure made during the winter, early in the spring, or as soon as the frost will permit, in a

fresh state. It is applied to the potato crop, spread in the open drill, and the seed dropped on the top of it; the drills are then closed; again plough, which effectually covers the manure; the ammonial gas evolved by the manure thus covered, must necessarily pass through the earth, and is consequently taken up by its absorbent powers. The essayist goes on to say, "That by placing a dense body of new manure deep in the ground, a permanent fund of enrichment would be created; for, after all the pros and cons which theory may advance upon the nutriment derived from the air, the ground is and will be found the real laboratory of production. I contend not abstractedly for the old opinion, or against the absorbent power of the foliage; I only insist upon the fact, that the gases are most advantageously prepared in the soil, whence, whether they pass through the roots in the state of sap, or into the air, to be thence attracted by the leaves, is a matter of indifference. The ground, its moisture, the electric actions of the roots, constitute the grand apparatus of nature; and to these, under a wise system of application, which experience alone can teach, we would trust for the establishment of the most perfect system of economy." Marshal Bugeault is a staunch advocate for fresh manure. He says, "Manure, when allowed to putrify for six months, loses half its fertilizing properties, whatever care may be taken to preserve it. When used at once, it causes a continual vegetation, and may be doubled in amount at the same time. The plants produced will restore to the farmer the principles they have drawn from the manure; whilst they themselves have drawn their nourishment in part from the atmosphere, they will afterwards, as food or roots, serve for the food of cattle." M. Noerte, Professor at the Royal Academy of Agriculture at Moeglin, Prussia, notices some experiments of graziers, made by weighing, and which give the following results, indicating a loss of 22 3, or somewhat less than one-fourth: —"After fifty-nine days, there remained of 100 parts of manure only 77,7 of the whole; and thus progressively, but always in a decreasing ratio, the most active decomposition always occurring at its earliest stage." M. Gasparin "considers it a complete illusion on the part of those who, deceived by the intimate admixture of materials in old dung, conceive that it has acquired value; by long fermentation it has lost nearly half its substance, more than half its soluble principles, and two-thirds of its nitrogen." Schattenmann describes an excellent practice, long employed in Switzerland. It consists in "saturating the ammonia of urine and dung with sulphuric acid, sulphate of iron, or gypsum; no trace is thus lost of the active principles of the manure, because the sulphate of ammonia is not volatile; and manure treated in this way possesses much greater powers. All the farmers of Alsoad who have adopted this method bear testimony to its value, and desire that it should be more extensively used." The quantity of sulphuric acid required to fix the ammonia in a liquid manure tank may easily be determined, by its subduing the fetid odor. I make one more extract referring to the quality of manure which should be chosen for the several crops of the farm. "It should be remembered that each plant contains particular salts which are necessary to its growth; thus all the grasses and corn have a large quantity of silica in their stems, and of alkalies and earthy phosphates in their seeds. Tobacco, peas, clover, and the stems of the vetch, contain much lime and magnesia; while turnips, marigold, potatoes, contain much alkali in their leaves and stems. If, then, these plants do not find the requisite quantity of these salts in the soil, they cannot be expected to thrive. The best mode of restoring these salts is to bury the residue of the former crops as manure. The dung of pigs fed on peas and potatoes, the dung of cows fed on hay and turnips, contains the necessary saline principles of grasses and turnips. That pigeons' dung contains all the saline principles of grain, that rabbits' dung contains those of herbaceous plants and legumes, and that the solid and liquid excrements of man contain those of all seeds in great abundance, and consequently they are useful to all grasses without exception, and are capable of taking the place of any other manure." Whatever may be thought of the defective management of farm routine, certain it is that there are men at work of profound ability, whose researches must lead to the best results. Let us improve upon them, while we testify gratitude for their labors.

FIRE AND WATER. — The Menai Bridge, says Herschel, consists of a mass of iron, not less than four millions of pounds in weight, suspended at a medium height of about 120 feet above the sea. The consumption of seven bushels of coal would suffice to raise it to the place where it hangs.

THE SMITHFIELD CLUB CATTLE SHOW.

Abridged from the Mark Lane Express.

We have again the pleasure to offer a report of the annual gathering of the Smithfield Club. It is very gratifying at all times to be able to report satisfactory progress; and of this we have abundant evidence on the present occasion. The improvements made in the showyard, allowing more space for the exhibition both of stock and implements, the beautiful order of arrangement, the cleanliness and neat fittings to the stalls, the disposition of the various pens, and the easy approach to every animal, make a visit more than usually interesting. The whole arrangement reflects great credit upon the indefatigable Secretary, and his able coadjutors, the Stewards of the Show. We might further say that we have seldom seen such an assemblage of contented faces. The proverbial grumbling said to be inherent in the British farmer is for once, at all events, thrown aside; we meet only with the composed and happy countenance, manifesting deep interest in the exceedingly good and great show before them. It is true that, occasionally, individual specimens of each breed of animals have surpassed those shown at the present meeting; but we think, as a whole, it is above the average, and that each separate breed is fully and admirably represented. We have watched carefully for several years the attempts made to introduce new breeds of cattle and sheep, by crossing in various ways. This year has certainly produced some very good specimens of the kind. Amongst them we would name the Earl of Radnor's steer, Mr. Hewer's ox, and Mr. Tucker's heifer, in the cattle classes, and Mr. Druce's three sheep. We mention the latter, as we have had our eye upon them for some time, as knowing it was an attempt at a new character of animal, to be derived from Cotswold and Down cross. At the Gloucester meeting, we reported unfavorably: they then denoted large, coarse heads and offal, with no counterbalance in frame. The specimens shown at this meeting are a very great improvement, and is the result of judicious in-and-in breeding. It is certain that these crosses have produced some extraordinary animals; and it is interesting to ascertain and notice how they favor the sire or the dam. The Shropshire breed, specimens of which were exhibited by the Earl of Aylesford, are very superior animals, and are, we believe, the result of careful crossing from Down and Leicester. We are not aware of other attempts at continuous crossing, but shall be glad to receive any reports thereof, if attended with success worthy of notice.

In the cattle classes, we have not much to remark on this head; indeed, we do not know of any continuous cross, with a view to perpetuate the breed shown at the yard. Those shown were very good specimens of a single cross.

SHEEP.

The sheep classes, as a whole, were well represented, the Down and half-bred classes particularly so; but we should like to have seen a better and more numerous class of long-wools of both kinds, that is, *Leicesters*, and *long-wools not being Leicesters*. Some good animals were shown, but, we think, not equal to former years. The extra stock class contained several very good specimens of these breeds, but nothing worthy of more especial notice. In the cross-breed classes many very splendid sheep were shown; proving satisfactorily the desirability of continuous attempts to introduce improved breeds. In the Down classes we think great progress is yet making: our taste accords most with the production of a great weight of food of good quality in a given time, either in growth or feeding. We think the Hampshire Downs shown gave decided advantages on this point, being very large, and heavy. The pure Downs also gave evidence of improvement. We never saw the Duke of Richmond's Downs show so well; they retain their symmetry under a broader frame of greater substance.

PIGS.

The celebrated Coleshill breed, though fairly represented, are not equal to former years, and we miss the class of fine porkers, of the kind bred by Mr. F. Hobbs, and others of the same school. As a whole, with the exception of class 31, we do not think the pig classes so well sustained as usual.

AGRICULTURAL ROOTS.

Thomas Gibbs & Co., Half-moon street, seedsmen to the Royal Agricultural Society, have a better selection of roots (all from their own seed) than we expected it was possible to have exhibited this year. A drum-head cabbage was pointed out weighing 31½ lbs.: various roots of mangel-wurtzel, of Long Red, weighing from 15 to 21½ lbs.; Yellow Globe do. attaining to 21½ lbs. weight; Red Globe do. 18 lbs. The variety of Long Red is said to have produced this season 56 tons per acre, and grown by Mr. Smith, of Harrow Weald, Middlesex. We were greatly interested in seeing several specimens from the Royal Farms—Yellow Globe mangel-wurtzel, weighing 21 lbs., from the crop which won the first prize of the Royal East Berks Association; several specimens of Purple-top Swede, from the same farms, of very large size: we saw no specimens elsewhere to equal them. Several specimens of swedes and mangel grown by Prince Albert (and for which his Royal Highness has gained the silver cup of the Royal South Bucks Agricultural Society, and prizes from the East Berks Agricultural Association respectively, for two years running,) are excellent even for the best turnip seasons. Those of the Duke of Bedford and Sir John Cathcart are little inferior, while Mr. Howard has one fully equal. The specimens of khol rabi and Belgium carrots, the latter grown by Col. Challoner, are also remarkably fine. Seeds are fully up to expectation as to quality; and, in variety, far beyond enumeration.

Mr. Skirving exhibited some very fine specimens of his variety, and many other common varieties—carrots, red and white, very good.

Mr. Chivas attended with specimens of his Orange jelly turnip: it seems almost equal to a melon in shape, and also in sweetness of taste, but we think it is not possible to grow any great weight per acre.

Mr. Skirving's Fluke potato is a very flat-shaped variety, *fluke shape*, or a flat oval; color, white; and appears to us not large enough to yield greatly in ordinary culture.

IMPLEMENTS.

The show of implements and machinery, now that everything is in its place, is fully as favourable as what we expected last week. The rather limited amount of space naturally makes the articles more select than otherwise they would be, with fewer doubles, but not to that extent which might be expected. At the same time improvement has obviously been made in this respect on the present occasion. About 313 stands, 2 ½ by 4¼ feet, have been divided among 88 exhibitors; some occupying only one, others upwards of a dozen, while a few have not made their appearance.

Our space will only allow a few notices of particular machines, &c, gathered from the interesting and copious report of the *Express*.

Mary Wed'ake and Co. show a variety of corn and cake crushers of different sizes; also turnip and chaff cutters, a haymaking machine, a lawn mowing machine, and domestic flour mills, well adapted for emigrants, either with French burr stones or steel. They also exhibit a gorse mill, an article which recommends itself to more than farmers, for in the neighbourhood of this great metropolis we could point out hundreds of acres which would return much more profit under gorse than grass, because the former would be invaluable green food during the winter to the cows of private families, who, if they once tasted gorse butter and cream, would give a long price for such green food.

Thomas Lloyd and Son, 15, Old-street Road, are the exhibitors of domestic steel mills and corn bruisers, of the best workmanship and material; and although many object to the former without assigning a valid reason, we could contrive to make a family brown loaf at sixpence with them, instead of eleven-pence as we are now paying, a difference of some importance in domestic economy.

James and Frederick Howard, Bedford, of their large assortment, exhibit as samples their first prize P and P P ploughs. Their ploughs have long been justly celebrated in every province of the kingdom, and the recent improvements made upon them have brought them to a very high degree of perfection.

B. Samuelson, Banbury, exhibits his digging machine; a powerful instrument in loosening the soil and turning up weeds. Of this series of stands we find Anthony's far-famed American churns.

Richard Garratt and Son, Saxmundham, have, as usual, a fine show of implements and machinery, consisting principally of drills and thrashing machines, driven by steam or horse power. The money prizes and medals which this firm have received would make a handsome little fortune to a farmer. Below stairs they exhibit their portable steam-engine, with a combined thrashing and dressing machine; and upstairs a horse-power portable thrashing machine.

William Coulson, Fetter-lane, York, exhibits a very ingenious and highly-meritorious mortising and boring machine, capable of mortising all sorts of wooden work connected with agriculture, as gates, fencing, &c. The boring part is added (under patent) very lately, and greatly enhances its value.

Arthur Lyon, Finsbury, London, exhibits mincing, pulping, and sausage-machines of the highest value in culinary affairs, and which doubtless ought to find a place in the farmer's kitchen.

Burgess and Key, Newgate-street, exhibit a model of an improved reaper, with screw gathering apparatus, which screws round the corn into a swathe. The enslaving labour of the man who works the rake of the American machines is justly condemned by every one who practically knows anything about labour, or who has any fraternal feeling in his bosom for his fellow-creature; and while this is an honest acknowledgement of the evil itself, it is also a laudable endeavour to get rid of it—with what success in the field we are, as yet, unable to say; but on the carpet is very interesting.

William Crosskill, Beverley, Yorkshire, shows his improved Bell's reaper, about the best of all the reapers yet in the field; inasmuch as it abridges labour in the greatest degree, doing away with the slavery of the man and rake. To lose sight of this important fact is to lose sight of the very object of machinery.

Ransome and Sims, Ipswich, have an invaluable selection, both above and below stairs. Their portable engine and combined thrashing and dressing machine can scarcely be beat, while their ploughs are superexcellent. What we have said of ploughs may justly be said of their fixed engines, of which one (a four-horse power) is shown as a sample.

R. and J. Reeves, Bratton, Westbury, exhibit two liquid-manure drills—the one, a Chandler; and the other, on what is believed to be an improved plan. The former has been sold to His Royal Highness Prince Albert, for Norfolk Farm.

William Dray and Co., Swan-lane, London, show their Lincoln Prize Hussey Reaper, in whose favour so much has been said. Little money is a powerful monitor, and has exercised its influence among more than merely practical farmers; hence the prudent plan of a special award being appropriated to cheapness. In this respect Hussey's machine has not a rival as yet; and from the high degree of perfection to which W. Dray and Co. have brought it, the finding of one will not be an easy task. We are far, however, from throwing obstacles in the way of the inventive world by supposing it is impossible to make a cheaper machine that even this is. This

firm also shows a very ingenious Belgian manure and seed dropper, worthy of the notice of gardeners and small farmers under spade husbandry, while for large farms they would be useful for blanks and headlands.

Signor Carlo Minasi, Brecknock-place, Camden-road, also shows his patent hydre-incubator on their stands, which possesses the highest degree of merit. Clucking hens have always been experienced as an eternal annoyance about every farming establishment, and as it is said that "three dips in the dam will make a clucking hen lay again," we wish Signor Minasi every success at our Christmas Meeting, for both pleasure and profit in the management of poultry are obviously greatly in his favour.

Clayton, Shuttleworth and Co., Lincoln, have long occupied a very enviable position in agricultural mechanics; more especially as to portable and fixed engines; and on the present occasion fully maintain their ground. Below stairs they exhibit a portable engine with combined thrashing and dressing-machine, and upstairs a fixed engine, a saw-table, chaff and turnip-cutters, and corn and linsed-crushers. All these things exemplify in the most satisfactory manner the high degree of perfection to which this firm has attained in the manufacture of heavy machinery of every kind, justly meriting that honourable and marked esteem which it has always received of the agricultural world.

W. P. Stantley, Peterborough, exhibits two sets of steaming apparatus, for which he has justly acquired pre-eminent distinction. The proper cooking of food for stock is a question second to none in agriculture, and this firm has done much to solve it. He also shows compound steel mills and corn bruisers of high merit.

W. Busby, Bedale, Yorks, shows his far-famed prize ploughs and carts, as also drill horse hoes. These are articles of the highest merit and most deserved celebrity.

Richard Read, 35, Regent circus, London, exhibits bullock-probangs and garden-syringes of various kinds; they are both of the best quality and description, and are indispensable articles to farmers and gardeners.

J. A. Williams, Baydon, Hungerford, shows his "Patent self-holding lever-plough and cultivator." It has long been a cherished desideratum among ploughmen to get a plough to go of itself without holding, and our Christmas exhibition of this year bids fair to solve the problem by Mr. Williams trifurrow plough, which goes on three wheels, requiring no one to hold it. Each of the three ploughs has a lever for regulating the depth of the furrows, with the necessary contrivances for fixing their breadth. We do not much admire the ploughs, but they are moveable for the grubbers or cultivators, of which there are four, with an additional lever; hence a Howard, a Ransome, or a Busby plough may easily be substituted, which silences this objection. The machine is adapted for steam or horse power, and obviously prognosticates a new state of things; but experience in the field, of which we have none, is absolutely necessary before judgment can be safely awarded as to merit; at the same time we may observe that, from experiments made, the patentee is sanguine as to results; for ploughing in seed in soils liable to "spew out the young plants," it may prove "a great affair," as he thinks it will.

Robert Hunt, Earl's-Colne, Essex, exhibits his "Improved engine for drawing clover," with a dressing-machine combined; thus delivering the cloverseed ready for market.

James Dobbs, 7. New Orchard-street, Bath, an excellent spirit level, with stand and staff.

R. H. Nichols, St. John's Eedford, exhibits his patent universal horse-hoe, which has several mechanical advantages in its favour—as the easy mode of steerage when the corn drills are crooked, and the regulating of the depth of the hoes in going over an unlevel surface.

F. Phillips, Hall-farm, Brandon, Suffolk, exhibits his Lincoln prize patent root pulper. The reduction of roots to a pulp for the mixing with ground corn and chaff, is a proposition which has very justly met with general approbation, and the machines are among the best pulpers manufactured.

Tuxford & Sons, Boston, exhibit their prize fixed and portable engines, and a combined thrashing and dressing machine—articles for the manufacture of which this firm has long been justly famed. In construction and manufacture their portable engine developes the highest degree of mechanical skill and workmanship, in evidence of which we have only to mention that it has been selected by the Governments of France and Prussia for the Museums of Art and Agriculture of those two empires, and by our own Government in her Majesty's dockyards. The incasing of the working machinery, or parts at the end of the boiler, under the immediate eye of the engineer, is universally admired. Similar characteristics of usefulness and durability recommend their fixed engines and thrashing machines.

William Williams, Bedford, exhibits his celebrated pipe machine, which has procured no less for himself than purchasers, so much satisfaction in many a yard. Independent of all the new machines which have from time to time appeared, it still maintains its popularity wherever introduced.

E. H. Bentall, Heybridge, Maldon, shows one of his prize patent broad-share and subsoil ploughs, a powerful instrument in loosening soils.

Wm. Cowley, Newport, Pagnell, Bucks, exhibits his improved tipping-cart, with vulcanized India-rubber springs, and horse hames, which have both been much admired.

McNeil & Co., of Bunhill-row, London, exhibit samples of their patent asphalted felt for the roofing and ceiling of houses; for putting under slates so as to exclude frost in winter and heat in summer. For these and other similar purposes this felt has now acquired a lasting fame.

James Burton, 370 Oxford street, exhibits his "patent stable fittings," plain, enamelled, and galvanized; hay-boxes, mangers, and water-troughs. His improved enamelled fittings, and

method of fixing the halters, are highly meritorious, and ought to find a place in every well-managed stable.

Tree & Co., 22 Charlotte street, Blackfriars-road, exhibit Ewart's cattle-gauges, which few intelligent farmers now want; also, Bedington's patent horse-halters.

In comparing these observations with our note-book, we find many details in the latter, of necessity avoided, for want of space. The brevity of our remarks may demand indulgence, but no apology. We never have, on any previous exhibition in the bazaar, had so little occasion to find fault, or so much good cause for general commendation. As a whole, the exhibition may be taken as an index that the state of British agriculture is highly prosperous, while it proves in the most satisfactory manner that our implement-makers are not so far behind the other arts in the manufacture of machinery as many imagine, and that farmers are following them as fast as the stubborn circumstances of the soil will permit.

In concluding our report, we beg to express our great gratification at the result of the meeting: seldom have we had such a successful one. We rejoice to see our Princes and Nobles competing in friendly rivalry with the humbler classes for the various prizes, and many of which they have deservedly carried off. What a contrast to the feudal ages!—no danger of the prophet's warning, "Woe to thee when thy princes eat in the morning," that is, luxuriate instead of attending to useful duties and employments. We trust the efforts of the Smithfield Club will long be blessed with great prosperity, and realize many such interesting meetings.

BIRMINGHAM CATTLE AND POULTRY SHOW.

This Exhibition came off the week succeeding that of Smithfield, and appears to have been eminently successful. It has been established about from four to five years, and is evidently doing good service, particularly to the Midland counties. The situation of Birmingham, as the centre of a vast system of railways, is peculiarly favorable for getting up displays of this kind. We are indebted for the following description to the *Mark Lane Express*:—

What cattle shows have done for our stock, this show has done for our poultry. The *rara avis in terris* is such no longer. The one good bird or so, which came only to prove how bad were nearly all the others, can now expect no such distinguished position. In nearly all classes nearly all were good, and the judges confessed they never had their experience so hardly tried as they found it at this meeting. But poultry, we must repeat, is no longer a mania. It may still certainly be more or less the especial pursuit of the amateur; shorn, however, of nearly all that "fancy" character which once made it his business alone. Our breeds of chickens were unquestionably never so good, while they were as certainly never so easily to be obtained. We hear no further of hundreds and thousands, except as a joke. Birds are sold for what they are worth, and a lot, even of prize Cochin China, may be had by the catalogue figures at a pound a-piece.

Self glorification is but an ungrateful task; it may be remembered, though, that some two or three years since, when this same Cochin China was in the very height of his ascendancy, we were the first to dispute his claims. We argued that for almost any purpose, either appearance, quality, or economy, we had fowls long known amongst us immeasurably his superior. For the farmer particularly we maintained there was no bird like the Dorking. Time, too, has fully justified us in this. For real use, the direct object for which poultry are supposed to be kept, there *is* no bird like the Dorking. This was the chief attraction of last week's show. If there had been a gold medal for the best pen of fowls of any kind, to this sort must it have been awarded. For beauty, or really fine plumage and shape, there is only one variety superior to the Dorking cock; while for the table, there is none, we believe, equal to it. The handsomest, or to use a yet more significant term, the most "thorough-bred" of all, is the Game fowl. A new and very commendable feature in the Birmingham Show of this year was a series of prizes for the best cock, singly, of each particular kind. The Game, as might be expected, were very strong here. The first prize-bird was decidedly, as far as form and plumage went, the best of the whole exhibition. It is seldom so perfect a one has been shown. He was the property of Mr. France, of Ham Hill, Worcester, but sold at the price marked in the catalogue—five pounds.

Nearly co-equal with the Dorking and Game came a Spanish, a breed which for general purposes many maintain are amongst the very best we have. They have been considerably improved upon of late, and never made a better display than on this occasion. We are here again, studying barn-door capabilities. The Hamburghs, on the other hand, though of almost every possible tint and spangle, were thought to be on the decline. The same may be yet more decidedly written of the Malays; whereas the Cochin Chinas, that once fashionable color more particularly known as the "Buffs," were much better than of late. There appears, however, not the slightest chance of their regaining anything of their quondam popularity. It was amusing, indeed, to notice the common neglect with which they were treated. Their warmest supporter, Mr. Sturgeon, now ranks no higher than "a commendation," though Mr. Punchard still holds his own as a first prize man.

It would be impossible for us to find room for a prize sheet, running to such an extent, and divided into so many sections as that of the poultry department of the Bingley Hall Show. We have endeavored, however, to convey some notion as to its general character, as well as of the state of the market. The dearest of all now

seem to be the Bramah Pootra, possibly because they are the scarcest. Assuming they will ever come into general request, there is no fear that they will soon find their level from forties and fifties to common sense prices. Unable as we are to do full justice to the awards, we may yet avail ourselves of the opinion of the judges, as to be gathered occasionally from a note in the prize list. They recorded, then, two classes of the silver-spangled Hamburgh as "*meritorious*," the colored Dorkings as "*very meritorious, and deserving the highest commendation.*" The cinnamon and buff Cochins were, on the same authority, "*an excellent class;*" the white Cochins "*a very good class,*" the Dorking cocks shown singly, "*a very excellent class;*" the Spanish cocks shown singly were "*the whole class commended;*" the Game fowl, blacks and brassy-winged, as a class "*generally meritorious;*" the white Aylesbury ducks also "*generally meritorious;* and the turkeys "*a very good class.*" As for the Aylesbury ducks, we never remember to have seen anything like so generally excellent a collection, and we have known them some time, too, both at home and abroad.

When we find, year after year, how one show is made to support the other, we come the more to wonder how the Smithfield and Birmingham meetings should ever have been allowed to clash. Without the opportunity of visiting the two, one cannot fairly ascertain how the different breeds of stock are just at present supported. By the experience of the Smithfield Show, for example, we might have written the Hereford cattle as going rather out of fashion. Birmingham steps in, opportunely enough, to correct this. The best beast here was a Hereford—he took the gold medal as the best. The best cow here was a Hereford, and she took the gold medal as the best. There was no want of competition, either, to damage such proof. The gold medal cow at Smithfield—that mistaken notion of Mr. Towneley's—was at Birmingham. She was here, again, the best of her sort; but not, the judges decreed, the best of all. The show of Shorthorn cows and heifers, in fact, went very much as the week previous—Mr. Towneley and Mr. Langston again first and second with their cows, and Mr. Phillips with his heifer. These classes—the Durham cows and heifers—were altogether very good, and might have been generally commended. The Shorthorn oxen and steers, on the other hand, were quite as remarkable the other way. A rougher lot, taking them all, we never remember to have seen; and there was nothing like a first-class animal amongst them. Mr. Stratton, it will be observed, took the uppermost place, with a beast undistinguished at Smithfield, and by no means in high favor here.

A limited entry of Devons still spoke more satisfactorily to the general excellence of the sort. We do not remember a bad animal amongst them. The show, however, was chiefly confined to our best known exhibitors: Prince Albert and Lord Leicester carrying all before them. The Prince's Devon heifer, first here, was the second prize at Smithfield; while of Devon cows there was only one exhibited, but to that one the judges very properly awarded the premium. For general merit, we must repeat, the lead was unmistakeably with the Herefords: when we come to consider the good cows and heifers in both the Durham and Devon classes that succumbed to a Hereford, we may fairly assume that Mr. Stedman's was a very perfect animal. She exhibited, indeed, both in form and color, all the best points of her breed, and had a round, low, and broad contour, not always the distinguishing marks of the sort. Mr. Heath's gold medal ox, though apparently not so highly bred, had fattened into a very serviceable beast; still his superiority over those against him was not so apparent—a fact that speaks well for the general strength of the entry. It is remarkable that the gold medal beast of the Birmingham Show at this meeting is the twin-calf of the one which took the same honor last year. In the Hereford steers Prince Albert and Mr. Niblett with the same two animals changed the places they occupied in London—the Prince here being the first and Mr. Niblett the second. It will be recollected the same thing happened last year with the two Shorthorn cows, and public opinion declared that the Birmingham was the more correct award. There is little choice, though, in this instance: both are very good, and two fresh sets of judges would be quite as prone again to differ.

Of the other kinds of cattle, the Long-horn has but a local repute that is not very likely to extend in its influence. Far more popular, one would imagine, must be the Highlanders and Scots, of which there were some very capital specimens. Birmingham, in fact, is commonly strong in these classes—the best quality of meat, we are assured, that the butcher can procure, and yet a beast never shown to the extent that might be expected. The Duke of Beaufort exhibited some promising crosses of the West Highlander with both the Gloucester and Jersey cow, the former obtaining a commendation from the judges.

In the show of sheep, considerable advance was observable—especially in the Southdowns, by far the best ever seen here. Despite the absence of the Duke of Richmond, Lord Walsingham could not improve on the two second premiums he took at Smithfield—a sufficiently significant fact of what he had against him. The sheep, however, above all others peculiar to Birmingham, is the Shropshire Down, one of the most useful varieties we have, and that is daily growing into repute. One of the great secrets of the sheep-breeder is this improving or enlarging on the frame of the pure Southdown; and we can only say it has been most successfully attempted by "the proud Salopians." It is being more boldly tested with other breeds, as some very excellent pens of cross-bred sheep bore witness to. They were all Downs on one side, crossed with the Leicester, Cotswold, and Oxfordshire Longwools; the most successful being with the Cotswold.

In the pig classes—once a strong point in a Midland Counties show—there was a very observable falling-off, both in the number and quality of those exhibited. It has often struck us, indeed,

that of late we have scarcely been advancing so systematically with the pig as with our other breeds of animals. The best show we have seen for some time was one of Berkshire pigs, in Ireland. There were but few of this kind at Birmingham, the show running almost entirely on Prince Albert's, Mr. Wiley's, and the Cumberland or Yorkshire white pig, with a sprinkling of the curious coloured Tamworth.

WINTER PLOUGHING.

(*From Purdon's Irish Farmer's Almanac*, 1855.)

We have strenuously enforced on our readers the necessity of having the land intended for green crops ploughed at an early period in November or December. The earlier it is done the better; for the longer time that the upturned soil is acted upon by the influences of the weather, it will tell so much the more on the after fertility of the soil. At the same time, the ploughing of stubbles, to be effectual, must be deep—not the scratching apology for tillage which we find in so many cases, not only with small farmers, but also with those who ought to know better. We have been often told, by men who pretend to have all the skill in the world, that deep-ploughing, whether by the ordinary plough or the subsoil-plough, is all new-fangled nonsense; that such notions may do very well for gentlemen farmers, or the demesnes of noblemen, where they imagine expense is a secondary consideration, but that it is not applicable to "the farmer who has his rent to make." Such objections—for arguments it would be ridiculous to call them—can only proceed from those who are profoundly ignorant of the first rudiments of agriculture; and until such persons either change their opinions or their profession, so long will the mode of farming pursued in Ireland be defective.

ROTATION OF CROPS.

As this is the season when the preparatory operations for cropping during the following year are performed, it is a fitting opportunity for discussing the principles of a succession of crops. This is one of the most important subjects to which the attention of the farmer can be directed, because his succes in a great measure depends upon it. We may drain and subsoil our lands; we may add manure in the greatest abundance; but if the cropping of the farm be not arranged on a proper system, all these operations will be ineffectual. It is found that, when plants of the same kind are cultivated for a series of years on the same portion of land, however fertile the soil may have been, it gradually loses its powers of production, until the return from it becomes so small as not to repay seed and labour. By such persons as farm in this manner it has been found necessary to allow the land to lie uncultivated for two or three years, when it has become, as they term it, "run out;" and as it will then be found to have recovered, in some degree, from the treatment given to it, it is again subjected to the same course, until its exhaustion proclaims the necessity for desisting, for some time, from growing any crops on it. Since the failure of the potato we have observed that there are many farmers who try to manure a greater breadth of stubbles for the succeeding crop of wheat or barley; and the practice or bare fallowing is also extending. Now, in order to understand the absurdity of such cropping as the above, we shall state what are the recognized principal of successional cropping. "First, every plant has a natural tendency to exhaust the soil; second, all plants do not exhaust the soil equally; third, all plants of different kinds no not exhaust the soil in the same manner; fourth, all plants do not restore to the soil the same quantity nor the same quality of manure; fifth, all plants differently affect the growth of weeds."

It is from the soil that the food of plants is chiefly derived; and, as each species requires food peculiar to itself, it naturally follows that, when one species is grown for a series of years on the same spot, the food which this required, and which existed in the soil, must become every year lessened, until finally exhausted. But, as different species of plants require different kinds of food, it is evident that, although that which is necessary for one kind of plant may have been exhausted, there may still remain in the soil a sufficient supply of other substances which would prove favorable to plants of a different nature from those previously cultivated. Again, some plants derive their food from the surface-soil; whilst the roots of others penetrate deeply, and extract their food from more remote sources. If, therefore, a succession of such plants as derive food from the surface be cultivated for some years, this surface-soil must, of necessity, become exhausted of the suitable supply of food, whilst the store contained at a greater depth is untouched. It may be urged that the food which has thus been extracted from the soil by any particular variety of plants is restored when we apply manure. This is true; but mixed manures, such as farm dung, contain a variety of substances suitable for very different kinds of plants; and, therefore, such as are not required by the species grown either lie useless in the soil or are lost. But there are other reasons why plants of a different kind should succeed each other; and one of these is stated in the fifth proposition mentioned above—namely, that "all plants differently affect the growth of weeds." Not only is the growth of weeds encouraged by the growth of certain plants, but the removal of these is precluded by the mode of cultivation applicable to these plants. When oats are grown in succession, we find that scutch-grass, crowfoot, and other weeds, will, in a short time, cover the land and choke the crops; and if such land be subjected to the strictest summer fallowing, in the course of which every possible vestige of the weeds is destroyed, yet if grain crops are again cultivated, the land will again become foul. It is necessary, therefore, to alternate such crops with others of a different nature, which will allow of these weeds being eradicated during the process of cultivation required to grow the alternated crops. We are

aware that some speculative farmers suppose that, by pursuing a certain course of management, the growth of weeds may be checked, if not entirely overcome. This they propose doing by drilling the grain crops, and by the use of the horse and hand hoes during the earlier stages of the growth of the plant; but whilst we admit that such treatment will check the progress of certain weeds, we must deny its capability of superseding a system of alternating plants of different natures. Such is a brief view of causes which render a rotation of crops necessary to secure the fertility of the soil; and we would wish to impress the importance of the subject upon our readers, because there are, comparatively speaking, very few farmers in Ireland who understand the importance of successional cropping.

FEEDING OF SHEEP.

It appears from experiments of the Leipsic Society, that sheep cannot be fed to their full extent on hay alone, and that those of a particular breed, which, when fed on hay, reach a weight of 90 lb., acquire an additional 10 lb. by the use of concentrated food. Further, that hay is not favourable to the production of fat, but that the grains, especially rape and linseed cake, greatly surpass it. Experiments on cows, have also shown that 1 lb. of rape-cake given in the food produces an increase of ¾ lb. of milk, and that with cows of high milk-producing powers it may produce double that quantity; or, on the average, rape-cake will produce its own weight of milk.—The highest effect is produced by 2 lb. daily; but this quantity is too high, if butter is the object, as it acquires a disagreeable flavour; but when the milk is to be sold, this quantity may with safety be employed. In the production of milk, rape-cake cannot be replaced by double its weight of hay; and under favourable circumstances, when conjoined with food poor in nitrogen—such as straw, potatoes, or turnips—it will produce three times the nutritive effect of hay. Rape-cake is equally favourable to the production of flesh, and it appears that 1 lb. daily will increase the live weight of a cow by 15 lb., and sustain it at the higher point.—In one particular experiment the live weight of two cows was increased, in the course of fourteen days, by 62 lb.; and with the consumption, in addition to their former food, of 66 lb. rape cake. This effect, however; was only produced under favourable circumstances; for when three or four lb. rape-cake *per diem* were used, the animal only reaches a weight proportionate to this increase after the lapse of a very considerable time; and it appears that the more nearly the animals approach the fully fed condition, the more slowly do they increase in weight especially under the influence of the same food.

With sheep, 1 lb. rape-cake added to the daily food will gradually produce an increase of 20 lb in their live weight, provided the composition of the total food be properly attended to. This, however, it will only do in the early part of the feeding, its effect being somewhat diminished in the latter part of the process. The poorer the other nutritive matters supplied to the animal are in nitrogen, the larger is the quantity of rape-cake which may be advantageously employed. It is not found advantageous to give to each sheep a larger quantity of rape-cake than ¾ lb. daily. If the daily food of a sheep of medium weight consist of 4 lb. turnips, 1½ lb. hay, and a quantity of rape-cake be supplied in addition, commencing with a small quantity, and gradually increasing it to ¾ lb., the weight of the animal will increase in the course of six or eight weeks by about 13 lb, and with the expenditure in all of from 28 to 30 lb. of rape-cake. It thus appears that the effect of rape-cake on the sheep though favourable, is not so striking on the cow. These experiments have been followed by an inquiry into the quality of the dung produced. To connect together the whole inquiry, it may be well to mention the principal points established. It appears that when rape-cake is given to sheep, not for the purpose of fattening, but in small quantity, and a part of their winter food, not more than 1-6th of the original quantity of nitrogen disappears during the nutritive process and by decomposition, and the other 5-6th remain in the dung. The quality of the cow dung is similiarly increased; for, as 1 lb. of rape-cake produces 1 lb. of milk, containing only ⅛ of the nitrogen of the cake, the other ⅞ must manifestly appear in the dung. When, however, a rapid increase is taking place in the weight of the animal, a smaller proportion of the nitrogen will pass into the dung, and a larger quantity be retained within the body of the animal. What proportion is thus retained for each 100 lb. increase in the live weight cannot be accurately deduced from the experiments; at all events, it it is clear that Boussingault's estimate of 3,66 lb of nitrogen is to high—a result which is also brought out by Mr. Lawes' experiments. It may happen that, when a rapid increase in the weight of the animal occurs, the whole of the

nitrogen of the concentrated food may be retained in the animal; and this actually occurred in one of the experiments where in fourteen days 56 lb. of rape-rake gave an increase of 62 lb. live weight, and at the same time 38 lb. of milk.—In this case the rape cake employed contained 2.8 lb. of nitrogen, and the nutritive products 2.49, or very nearly as much; but this is so to speak a mere passing phenomenon: for so soon as the live weight corresponding to this mode of feeding is acquired, only that portion of nitrogen necessary for the milk is retained, and the remaining $\frac{7}{8}$ pass into the dung.

FOOT-ROT AND SCAB.

Foot-Rot.—The usual symptoms are—the feet will be found hot and tender, the horn softer than usual; and there will be an enlargement about the coronet and a slight separation from it, ulcers being from below, with a discharge of thin fœtid matter.

The ulceration of foot-rot will not long exist without some other annoyance or consitutional disturbance; when at length the powers of nature fail, and the animal dies from irritation and want. I will state the proper way to proceed.

First, cut the horn away, and clean off all the pus (matter); wash the feet well with soap and water; and rinse them with plain water; after drying a little, wash again with a solution of chloride of lime, in proportion of half-a pound of powdered chloride to two quarts of water. This will remove the fœtor and tendency to mortification. The muriate or butter of antimony must be resorted to, by means of a feather applied to every denuded part. There is no application equal to this, in my opinion, and it readily combines with fluids, and becomes diluted. Little or no harm can be derived from it, so far as these foot cases are concerned. It supercedes every other application. The foot should be dressed every day.

Scab.—From such an infectious, troublesome, and destructive malady a sheep is never even slightly affected but it proceeds to rub itself against everything it meets. As soon as the disease is discovered, it becomes the duty of the shepherd to examine every animal in his charge and remove every affected one from his flock, and dress it with ointment composed of—corrosive sublimate, 1 oz.; white hellebore, in powder, $1\frac{1}{2}$ oz.: whale or other oil, 3 quarts; rosin, 3 oz.; tallow, 2 oz. The sublimate must be reduced to a fine powder, and mixed with a portion of oil, and also the hellebore powder; the rosin, tallow, and other ingredients then added and well mixed. Should the compound be too thin the oil may be diminished and the tallow increased.—Some little attention being paid to the animals, they will in a short time recover.

Cutting Roots for Sheep.—A correspondent of the *Mark Lane Express* says—"It is a matter of impossibility for young sheep to eat the turnips without being cut; I am certain that they will not thrive as quickly, and I consider that one part out of three is lost. There is this difference in cutting turnips and not cutting them: Suppose you put 100 sheep on turnips not cut and 1 lb. of oilcake, they will not do so well as 100 sheep put on turnips cut for them without any cake, neither will they be fit for the butcher so soon by two months. Let any one try it: they will find my remarks upon this matter quite true.".

Sheep.—No animals upon the farm pay better for a warm stable than sheep. The increase of wool, to say nothing of the saving of life, would be a sufficient inducement, if properly understood, for any reasonable man, to stable his sheep as carefully as his horses. But if you cannot do that, in pity, give them a cheap shed with a southern aspect and a dry yard. Give them plenty of good hay, and roots or grain every day, and they will pay back all the extra charge in the spring.

FRUITS AND FRUIT CULTURE.

The American Government publish annually from the Patent Office—corresponding in some respects to our Bureau of Agriculture—a report upon inventions, agriculture, horticulture, &c. The facts, experiments, discoveries, suggestions and opinions, embodied in the report, are collected from returns in answer to official enquiries sent to all parts of the Union. We had hoped that something of a similar kind would have emanated from the Canadian Bureau, as the law makes provision for it, but political "chiselling," as it is called, seems to have engrossed the chief attention of our public men. It is evidently a mistake to place a mere politician at the head of the Bureau. A person specially qualified should be appointed to that office, and his position should not be affected by political changes.

We give below a few extracts from the Patent Office Report, as a sample of the useful facts it contains:—

Maine Apples and Ice.—Apples grown in this State (Maine) are kept a month longer than those raised in most of the other sections of the country. I therefore believe that Maine will, at no distant day, become one of the largest exporting fruit States in the Union. Immense quantities of ice are annually exported to foreign countries, in ships owned here, which affords us every facility for adding to the cargoes of ice, our long-keeping apples. In this respect we have many advantages over our brethren of other States, which have less seacoast, and, with two exceptions, less navigation. Maine is indented along the seacoast with more than three hundred harbors, suitable for ships, steamers, and other vessels.—*Henry Little, Bangor, Maine.*

Cost and Profit of an Apple Orchard.—One hundred trees planted on an acre of land will cost, on an average, $25. The land should be kept in a state of cultivation whilst the trees are coming into bearing. About $25 expended in care and labor, besides the crops taken from the land, will bring them into a bearing state. When an acre of trees is in its prime it will average 400 bushels per annum, provided the land is kept rich and loose, and the trees well managed. Average price, 66 cents per bushel. Our surplus apples are valuable for all kinds of stock, particularly to winter store-hogs. Sweet apples are worth about as much as potatoes.—*A. Preble, Lincoln Co., Me.*

Quinces and their Cultivation.—Quinces are coming rapidly into cultivation here. Twelve years ago there were not more than half a dozen bearing trees in and about this city. Now, many families raise their own. The supply of our market with this fruit has usually been from the western part of the State. They are retailed here to private purchasers, at from 31 to 50 cents the peck, according to the supply in market. Deep and rich soil is also found useful. The use of salt, once considered indispensable, is now, I think, entirely abandoned. The liabilities of this fruit to injury are few; occasionally, during a mild winter, its young wood is killed in spots where it is too much sheltered. It is also sometimes injured by the borer.—*C. E. Goodrich, Utica, N. Y.*

Shaker Specific for the Pear Tree.—We have had great difficulty in making the pear tree grow on our clayey soil. After persevering and experimenting fifteen years at least, we have discovered a specific. We tried all the special manures our experiments or reading suggested, until, observing the effect of urine on an unthrifty apple tree, we were induced to try it on some pear trees which were unthrifty in spite of iron, ashes, lime, boneblack, and high manuring. The result was, that the trees shot up a growth as luxuriant as weeds in a hotbed. Those which had rarely made an inch of growth in a season, grew scions from 18 inches to 3 feet even, in the summer following the application. The mode of treatment should be as follows:—The trees should be well and carefully set out, the soil made good by the application of iron, lime, or leached ashes. As soon as the buds are fairly opened, take of urine from the watercloset about two quarts, and sprinkle it around each tree; stir the surface of the earth a little, so that it may be well mixed, and also to prevent the forming of a crust by rapid evaporation: a cloudy day is the best time for this operation, as it retards the escape of volatile salts. In about a month, another application may be made in the same way. After this, it is only necessary to repeat the operation on those trees which may not have yielded satisfactorily to the first treatment. Care should be used not to overstimulate, as this, of course, would be dangerous.—*Shaker Society, Worcester Co., Mass.*

Plums in Wisconsin.—For raising plums, this county will probably be unsurpassed. The trees make the most astonishing growth; I have seen shoots of one year's age eight feet long; six feet is quite common. The whole timbered country is full of wild plum trees, which answer well as grafting-stocks. A common error is to set grafts too high upon these; the graft outgrows the stock, which is of slow growth, and after a few years the tree becomes top-heavy, and is liable to be broken down by the wind. This is prevented by grafting but a few inches above the roots, and working the soil up to the place of union. Good plums, with us, are sold from 8 to 12½ cents per quart.—*G. de Neven, Fond du Lac, Wis.*

Pruning Trees—Valuable Hints.—I think most people prune too much. The tap-root is cut off when the tree is planted, and all the branches, for at least six feet from the ground, and in some cases they are pruned so severely, that a man on horseback could ride round them without touching his hat to the few limbs that are left. Thus the trees are treated with downright cruelty. The result is, the bodies of the trees are more or less affected with the "sun-scald." However we may respect the customs of our fathers and grandfathers, we are not obliged to copy their errors. To preserve the pear and other fruit trees that have been deprived of their much-needed dress and ornament, we wind the bodies with wreaths of hay, or shade them by cotton cloth from the ground upwards to the lower branches. Where this is done, in every instance it has afforded a sure protection from sun-scalds. I have long been convinced of the great benefit of permitting all fruit trees to branch near the ground, suffering them to form the shape of a pyramid.—*H. Little, Bangor, Me.*

Why does the sting of an insect leave pain?—Because the sting is hollow, and conveys from a bag or sack, with which it communicates, a poisonous fluid that irritates the wound.

From what is the word "electricity" derived?—From a Greek word signifying "amber," because it was in the friction of this substance that it was first discovered.

HOP GROWING IN THE UNITED STATES.

We gather the following information from the last Patent Office Report (U. S.) Such returns in reference to this and other crops in Canada, would be highly interesting and useful, but there must be a change in the administration of the Bureau before we get them. The late (Canada) Census returns on such subjects, can not be relied upon. Perhaps the American Census has been more carefully taken. The Agricultural societies afford the best means for obtaining accurate information on the subject of soils, crops &c. The last American Report informs us that the Hop, so extensively cultivated in the field for breweries, and so well known to every house-keeper, for culinary use was unknown to the ancients. It was raised in Holland prior to 1854, and its properties and uses well understood. It was introduced into England, from Flanders, in 1524, but its strobiles were not used to preserve English beer before the latter part of the reign of Henry VII; and a century after, Parliament was petitioned by Londonders to prohibit their use.

The Hop plant was introduced into the British North American Colonies soon after the first European settlements, and cultivated in New-Netherlands in 1629, and in Virginia as early as 1648.

The amount of Hops raised in the United States in the year 1849; as by the census returns, is 3,497,029 pounds; of which New-England raised 707,743 pounds; New York raised 2,536,629 pounds, and all other States only 253,987 pounds. Vermont, New-Hampshire, and Massachusetts are the principal New-England Hop-growing States.

The first named raised in 1849, 288,023 ponnds —Vermont increasing 239,886 pounds in ten years; New-Hampshire, 13,749 pounds, and Massachusetts diminished 133,200 pounds; while New-York increased in ten years 2,086,-040 pounds.

Thus, in the year 1839, New York alone raised 2,536,299 pounds, and all other States in the Union only 960,730 pounds.

The Hop product of Otsego County is now much larger than that of any other county in the State or in the United States. In 1839 the annual amount raised was only 447,250 pounds, and in 1849 it was 1,132,052 pounds—being an increase of 684,802 pounds in ten years.

The Hop product of this county, in 1854, according to the report of the County Agricultural Society, is 2,000,000 pounds—being an increase of 867,948 pounds in five years, and 1,552,750 pounds in fifteen years.

The other principal Hop-growing counties in the State are Madison, Oneida, Cortland, Herkimer, and St. Lawrence—Madison raising, in 1849, 529,070 pounds; Oneida, 294,944 pounds; Herkimer, 163,408 pounds, and St. Lawrence, 101,855 pounds, while Otsego County raised nearly one-half of the whole Hop product of the State.

By the census of 1850, there are in Otsego County 376,868 acres of improved land, and 171,-294 acres of unimproved land—valued with the improvements and implements, at $13,158,005.

By the Report of the agricultural Society, of this county, there were, as estimated, 2,500 acres of Hops in Otsego County, in 1855, yielding 800 per acre, making an aggregate of 2,000,000 pounds, which at 30 cents per pound, realized to the Hop-planters $600,000.

The cost of production is stated at 10 cents a pound, which makes the actual profit, of the Otsego Hop-crop the past year $400,000, and each acre of Hops producing a product of the value of $240.

The price of Hops is, probably, more fluctuating than any other agricultural production, yet an increase of Hop-culture is recommended, for the reason that the average price of Hops for the last forty-eight years, in New England—being about 13 cents per pound—has paid a greater profit than any other agricultural crop during the same period.

In Otsego County, within the last few years, the price of Hops ruling high, I have known many farms of a hundred acres, with good buildings, offered for sale at a less sum than was received by the owner for his Hop-crop upon five acres of land. So you see it is strictly true that the Hop up in Otsego is a great institution.

A PREMIUM ORCHARD.

The Oneida Country (N. Y.) Agricultural Society awarded a premium of $15 to J. Talcott, of Rome, for his orchard of 385 trees, the largest of which were planted in 1849, and are now sixteen inches in circumference. The following statement is from the report of the Society; The land on which Mr. Talcott's orchard is planted is mostly a sandy or gravelly loam with a clay subsoil. Previous to planting, it was plowed in back furrows, and the holes were dug along the ridges, thirty feet apart, three feet in width, and eighteen inches deep. In each hole was put a large wheelbarrow load of compost, made of stable-manure, lime, ashes, and much [decayed forest-leaves would have been as good] under cover the year before. In planting the trees, surface soil was placed about the roots. The orchard ground has been cultivated to hoed crops. Once a year the trees have been pruned, and washed with strong soap-suds, a woolen cloth being used for this purpose. This washing has given the stems a clean, healthy look and has tended to keep away the insects. At the approach of winter the soil has been heaped up about a foot around the trees. This kept away the mice.

Communications.

REPORT ON THE PRESENT STATE OF BRITISH AGRICULTURE,

BY WILLIAM HUTTON, ESQ.,
Secretary of the Board of Statistics, Quebec.

[Continued from our last.]

That the farmers of Canada require to pay particular attention to the increase of the growth of green crops, in order to ensure a fresh supply of that particular kind of nourishment to the soil required for *continuing* the growth of wheat, in as great abundance as it has hitherto been grown, and on the same soil, the experience of our neighbours very plainly teaches us. Mr. Kennedy, in his report on the Census of the United States, says:—The crop of New England *decreased* in ten years from 2 014,000 bushels to 1,090,000, exhibiting a decline of 924,000 bushels in this old wheat growing country. In the older Townships of Canada, so soon as the farmers cease to have new land to bring into cultivation let us take care lest the same results follow, probably the results of overcropping —and tho' in Canada we cannot, perhaps, at present, procure or use to advantage artificial or what are called portable manures, owing to the high rate of freights, &c., we have yet abundance of *new land* whereon to cultivate the turnip, mangel wurzel, and thus increase our manure heaps and also take advantage at the same time of the very high price of meat, which has extended to *our* markets as well as those of Great Britain.

In the present state of our Agriculture, it may be said and perhaps with truth that having other resources we have no occasion for imported manures, at all events as a general thing. There may be localities even now where they would be desirable—a very few years will increase the number. The great resource, viz., new land which the Canadian farmer possesses, is (in the old townships) quickly passing away—many of them having already nearly all the land under cultivation they can spare for that purpose, being obliged to keep enough under wood to supply their fuel. It would appear specially incumbent upon those who have any left to lose no time in following in the footsteps of our old country friends and use the forcing system by the means which are still available to them. It is a fortunate coincidence that high prices are a great inducement to most farmers to increase their stock and crops—at present they will not complain on that score, and it is well that the same movement that increases the quantity of our beef and mutton, butter and cheese, will also lead to the increase and improvement in the quantity and quality of our grain.

I know it is said by many farmers that wages have risen so high here that they cannot undertake any extra labor. Wages have risen just as high in proportion in Great Britain, and extraordinary as it may appear, it is a fact and not difficult to account for, either, that in Canada we are much greater adepts in the use of labor-saving machines and expedients, and much greater economisers of labor than the farmers of Great Britain, in fact they are constantly endeavoring to take leaves out of our book, and it is a fact also well worth recording, that the *acreable* expense of putting down and of saving crops is much less in Canada than it is in Great Britain or even Ireland; therefore, the argument that wages are too high to carry on farming to advantage in Canada does not hold good unless they be also too high in Great Britain, a circumstance which I heard no farmer complain of. In fact, the very high prices of grain, meat, &c., in both countries preclude such a complaint.

There is another subject which is engaging a great deal of public attention, viz:—the producing of more breadstuffs to meet the increased demand occasioned by increased gold—increased prosperity—and therefore increased facilities of purchase for consumption. Free Trade and free importations of grain to England, which almost all the farmers of Great Britain and not a few of those of Canada thought must bring ruin to the Agriculturist in both countries has not been found to afford sufficient means of supply to meet the demand—hence new exertions are necessary to increase production. The exportations from the United States to Great Britain have not been found nearly so abundant as it was expected they would be—and the increased export that there has been of wheat and flour, has not been owing so much to increase of produce as to the means which the farmers have taken to live upon other descriptions of food and spare as much as possible of these commodities for export owing to the very high price which they were producing. In addition to the fact that very many of the States have fallen off in their supplies of wheat, it appears that very little attention is paid to Agriculture in that country.

A late New York paper contains the following remarks :—"Farming is shunned by the great majority of our more intelligent and enterprising citizens—trade--manufactures—invention—shipping—mining—law—physic and gambling are more attractive; and while this shall continue, we must eat dear bread and be glad to get it at any price. Agriculture, guided by science, and pursued by noble ambition is the only effectual remedy for the prevailing dearth, and this like most effective remedies is slow in its operation." Another paper states the wheat crop of Virginia is almost an entire failure, no fields having any but those manured with guano—and to corroborate these statements it may be mentioned as an extraordinary fact that this little country of Canada with her two millions of inhabitants exports more than one-third, not far off one-half, of the quantity exported by the whole 32 United States and four territories containing 23 millions of Inhabitants—and were the Lower Province to exert herself to improve her agriculture we should export fully one-half as much as all the United States.

According to the last Boston Almanac, the export of wheat and flour from the United States fell off from $15,893,284 worth in 1848, to $11,-550,063 in 1851, a prodigious falling off, whilst the exports from Canada of these articles have increased from £953,830 in 1850, to £1,834,819 in 1853, nearly cent per cent. The following table shows the export of wheat and flour from Canada for 1850—51—52—53 and the value of the same, showing an advance *in one year alone* of 117½ per cent increase in the value of wheat exported, and 54 per cent in that of flour :—

1850.	Bushels	Value.	1851.	Bushels.	Value.
Wheat...	1,-95.029	£268 033	Wheat...	933 756	£171,795
	Brls.			Brls.	
Flour..,.	650,439	685 796	Flour....	668,623	670 825
1852.			1853.		
Wheat...	1.883 593	£755 456	Wheat ..	2,666.903	£772.610
Flour....	702 624	659 377	Flour....	786 053	1,062,203

The increase in the number of *bushels* grown in 1853 over that of 1852 is about 47 per cent, the high price of 1854 has caused the *value* to be so very much greater in proportion than the quantity but still the increase is *very great* for one year. In speaking of the export of Breadstuffs it is perhaps much to be regretted that so much *wheat* is exported from Canada instead of being first converted into *flour*. On this subject the editor of the *Farmer's Companion* published in Detroit, has been making some observations, tending to show the loss of the farmer by exporting wheat instead of flour :—

"He calculates that the six million of bushels of wheat annually produced in that State, (the United States Census gives less than five millions for 1849) 4,300,000 are exported which would yield 37,800 tons of Bran and Shorts, which if kept at home and fed to cattle would add far more wealth to the State than it receives from the price obtained, because the withdrawal of so much of the material constituents of wheat from the soil will tend to render it unproductive. The analysis of Bran shows that it contains,—

	PER CENT.
Starch Dextrine and Sugar	53—00
Sugar of Liquorice	1—00
Gluten (flesh forming)	4—90
Fatty matter	3—60
Woody matter	9—70
Salts	0—50
Water	13—90
Aromatic	3—40

"In some wheats the ash is as high as 7 per cent. Now all these are as essentially valuable as food as the wheat itself, and for fattening much more so; the *oil* of wheat residing in the bran, the whole wheat giving only about one cent of fatty matter or oil. The ash of bran consists chiefly of Phosphate of Magnesia, a very valuable salt both in food and in manure—while it is one of the rarest in the soil—one of the most expensive to restore and without which wheat cannot come to maturity.'

Another evil consequence of export of wheat is that the flour barrels which are manufactured here, and of stuff of which we have plenty to spare are not required, as the wheat is exported in bulk.

Amongst the various means which have been taken to increase the production of wheat in Great Britain, is one by a Mr Smith who has published a tract that has already reached the twelfth edition, explaining his plan. The *Economist* thus observes in alluding to it :—

"Recent and scientific investigations have tended to show that such a management of arable land as will fit it for receiving and retaining all the fertilizing elements which have been found to exist in *the atmosphere and in rain* greatly assists—if it does not supersede manure for the growth of wheat, and doubtless the simplicity of a long or summer fallow so general in the modern systems of husbandry has some advantages. Of this, the plan of Mr. Smith of Lois Weeden, furnishes a striking illustration. It will be recollected that that plan consists in cultivating wheat every alternate year, for a series of years, on the same land without manure.

"Three rows are planted a foot apart, then a space of three intervenes, then another set of three rows, then a space and so on over the whole field. The spaces are deeply forked and weeded throughout the year in preparation for the crop the following year—when the land on which a crop has been grown is to be fallowed in the same way."

In a preface to the twelfth edition of his tract, Mr. Smith says :—

"Had any argument or fact been wanting to strengthen this persuasion it would have been supplied by the incidents of the present year; the year 1853 will long be remembered as, perhaps, one of

the worst years for wheat (in respect to yield) ever known. Where one farmer looked for forty bushels per acre he reaped only 24; when another felt assured of having 32 he found it dwindle to 16. There are exceptions, but so it has been generally. I am cultivating a four acre piece of light land, not manured for the last seven years, and this year's crop of wheat was the fourth in succession. What in my case has this year's produce been? It so happens that two fields to the right and left of mine and of precisely the same character and quality with mine were also in wheat this year. The one crop had followed beans with the richest dressing of oil cake dung, the other crop was part on fallow and part after vetches fed off. The yield of the former is set at sixteen bushels or thereabouts, of the latter at twenty; of mine no one I believe not even the most incredulous scoffer has ever estimated the produce at less than 40 bushels."

This speaks well for the system of summer fallowing and the plan has the merit of novelty —neither has it the great objection of other summer fallows that there are two year's rent, two year's taxes and two year's labor for every crop to liquidate; the naked ground and extra labor on *it* adding to the extra produce of each crop, in addition to proving a substitute for manure, and on these accounts paying well. Should this new system prove as efficacious as Mr. S. represents it to be, it will furnish a very important fact that one acre of land well labored will produce as much without manure as two acres labored in the ordinary way with abundance of manure. There is no doubt that air and rain made good use of will effect a great deal, but the success of Mr. S's plan would require further confirmation in a wider field. The system is certainly worthy of great attention and a fair trial.

Another laudable exertion to increase the production of breadstuffs and meat was being tried by a first rate farmer on a model farm of his own, of the system of management of which he gave me a description and he appeared to be very sanguine of success. The main plan was to have every alternate crop a grain crop—occasionally stealing an extra crop—*i. e.*, having nine crops off the same land in eight years. Thus, after wheat he would plow down the stubble and sow winter vetches which would be cut off early enough to labor the land and sow turnips. Then he would have barley laid down with clover, and after taking the crop of clover he would plow down the aftermath and sow wheat, then manure for green crop, and so on manuring every fourth year, and occasionally stealing a crop. He had pursued this system on his model farm for some time with entire success—having a crop of grain every second year—and a prodigious supply of green food for housed cattle and horses, (they were of course never pastured). In fact, very few of the great farmers of Great Britain ever pasture their horses or cattle, and this is one of the great secrets by which they manage to procure such immense manure heaps, and such fat cattle at a very early age—and also such large supplies of milk and butter.

The breed of cattle which appeared to be the most highly approved for this latter purpose, was a cross of the Alderney and Ayrshire, of which I saw some remarkably fine and productive cows in England, and which are very generally as well as very highly esteemed; for Beef the Durham and Hereford, and for draft the Devon appeared to be the most appreciated.

Another so-called improvement was being tried in several places with the confident assertion by some, that it would tend much to hasten the fattening of cattle and hogs. This was solely by means of fermenting the food before giving it to the animal. One eminent implement maker in Belfast showed me a machine of which he said he had sold a great number, used for the purpurpose of cutting turnips or mangel wurzel very small, indeed in very thin slices from the size of a shilling to that of a penny and not thicker—after which the vegetables so cut were put into a large tub or vat and left in it for some days till they underwent a thorough fermentation, when they were taken out and given to the cattle or hogs.

The upholders of the value of this process do not pretend to say that the fermentation adds to the saccharine properties or any other valuable inherent property, but merely that it is in this state much more easily digested, and leaves the animal more time for sleep by requiring less mastication. I heard it asserted by very respectable authorities that this process amply repaid for the labor by the speed with which the animals that were fed upon it progressed to marketable order.

It was said too by some that fermentation did away with the necessity of "cooking the food." This so-called improvement had been only very lately introduced and its merits had not been fairly, or at all events not generally tested. I may also observe that in the feeding of black cattle wheat chaff and also cut chaff were very much used, being mixed with their cut turnips. In fact one of the great features of improved husbandry appeared to be to hasten forward beef and mutton for market in the speediest possible way,

most consistent with remuneration. The profits on cattle are now made to contribute a very large item towards the farmer's returns, probably on most farms half as much as the grain, exclusive of the manure; hence the great necessity for attending to the rearing of early maturing breeds of cattle and of cultivating green food and linseed, or in Canada, Indian Corn, to force them forward.

(*To be concluded in our next.*)

UNBURNT BRICKS FOR HOUSES.

To the Editor of the Canadian Agriculturist.

Lindsay, 10th January, 1855.

Sir,—Being desirous of obtaining advice and instruction in reference to the best method of building cottages with *unburnt bricks*. I have taken the liberty of soliciting such information as you or some of your numerous and intelligent correspondents may deem necessary for guiding a novice like myself in preparing for and carrying on to completion an erection of this material.

There are I am told many country residences of this description in the country to the north of Toronto, but it has not happened that I have had an opportunity of either seeing any of them or of becoming acquainted with the mode of construction, although I have been credibly informed that they possess some advantages over those of the ordinary burnt bricks; that they can be erected at a much *less expense*; are *warmer in winter* and *cooler in summer*, &c.

I should be glad to be informed of the usual *size* of those unburnt bricks; whether they can be laid in the wall as well with *mortar made of the same material as the bricks* (viz. *clay*) as with *lime mortar*; and as I should be desirous, in case I should build, of plastering the *outside* with suitable waterproof plaster, I should like to know whether there is any difficulty or risk in insuring such plaster to *stick firmly*, so that its durability may be relied upon.

When putting on the plaster outside or inside, would it be advisable to first sprinkle the walls with water, in order to slightly *moisten* them; or, would the plaster stick as well or better by being applied to the *dry surface* of the bricks?

Would the bricks be any better for having *chopped straw*, or other similar material, mixed in the clay when making?

I should take it as a favor to receive information, through the medium of your valuable journal, on these several points referred to, and such additional directions as may be considered essential for such an undertaking.

As this section of the Province is progressing rapidly in general improvements (and would improve very soon in a much greater ratio but for the scarcity of *laborers*), I have reason to believe that many farmers and others would erect dwellings of these unburnt bricks, should their declared *cheapness, comfort,* and *durability*, become an established fact.

I am, Sir, your most obd't serv't,

JOHN KNOWLSON.

Remarks.—We shall be glad to hear from such of our readers as can, from experience, answer our correspondent's enquiries. Our impression is, that these buildings have not given satisfaction in the vicinity of Toronto.

NEW VOLUME OF THE AMERICAN HERD BOOK.

MR. ALLEN'S CIRCULAR.

Dear Sir,—During the past year, I have been enquired of, by several Short Horn Cattle breeders, when I intended to issue a second volume of the American Herd Book. My reply has been, "Not until the Short Horn breeders would come forward in sufficient number to patronize the work, by furnishing the pedigrees of their stock, and to buy the book to an extent sufficient to warrant the expense of its publication." The first volume of the American Herd Book, which I published in 1846, is still indebted to me in the cost of the book itself, throwing in the time and labor I spent upon it.

At the late "National Cattle Show," held at Springfield, Ohio, a large number of Short Horn breeders were assembled, from ten or twelve States, and the Canadas. The subject of a continuance of the publication of an American Herd Book was fully discussed by them. It was agreed that, with so large a number of Short Horn Cattle as are now owned and bred in the United States, and the Canadas, a Herd Book, devoted to the registry of American Cattle, was imperatively demanded. The expense and trouble of transmitting their pedigrees to England, and the purchase of the voluminous English Herd Book, now costing at least one hundred dollars, is no longer necessary; and that as the breeding of pure Short Horn blood must depend much upon having a domestic record at hand,

where the requisite information can be obtained, and that of a reliable character, a Herd Book is indispensable.

In pursuance of the unanimous request of the gentlemen engaged in breeding Short Horns, above alluded to, together with many individual solicitations, which I have received from other breeders during the past year, I have concluded to issue this, my prospectus for a second volume of "The American Herd Book," and to request you, if you feel an interest in the work, to inform me at your earliest convenience, whether you will aid in its publication by sending a record of your animals for registry, and to designate the number of volumes of the book you will take. The size of the work will, of course, depend upon the number of animals registered, which, if this opportunity is embraced by the breeders generally, will be several hundred pages octavo, and illustrated with portraits of such animals properly engraved, as the owners may be desirous to have inserted, they furnishing the cuts for the purpose.

I shall also give an account of all the recent importations into the United States. A copy of the Catalogue of each separate herd will be given, whenever they can be obtained, together with the account of their sales, the prices at which they were sold, purchasers' names, &c. In short, every matter of interest in relation to them, so far as it can be obtained, will be given.

All papers relative to such information will be thankfully received, sent to my *Post Office* address at Black Rock, New York.

As it is necessary that I get to work by the first March next, you will oblige me by replying immediately, and informing me whether you will have your cattle recorded, and if so, what the probable number will be, and the number of volumes you will take. The recording fee for *each* animal will be fifty cents; the price of the book five dollars. The recording fees will be expected to be remitted in advance, when the pedigrees of the cattle are forwarded, and the book paid for on delivery.

If, by any casualty, the book should not be issued, the advance money will be promptly refunded.

That there may be as little uncertainty as possible, I wish that the reply to this may be as prompt as convenient, that I may know whether I shall be justified in undertaking the work; if so, I will give you notice of the fact as early as the first of February, 1855, on receiving which, your pedigrees and insertion fees will be required to be sent immediately.

Very respectfully yours,

LEWIS F. ALLEN.

Buffalo, Black Rock Post Office,
N. Y., Dec. 1854.

P.S.—As I cannot be presumed to know the name and address of every Short Horn breeder in the country, you will oblige me by sending one of these circulars to every breeder with whom you are acquainted, or to whom you have sold "Herd Book" animals, and give me a list of others, that I may send them a circular, so as to give as extensive information as possible on the subject.

L. F. A.

MUCH HONEY FROM A LITTLE.

Those who wish to increase the quantity of their honey, and also improve its flavor, can do so by following Longreth's directions, as follows;

"Dissolve two pounds of the purest white sugar in as much hot water as will be just necessary to reduce it to a syrup; take one pound of the nicest white, clover honey, [any other light-colored honey of good flavor with answer.) and after warming it, add it to the sugar syrup, and stir the contents. When cool, this compound will be pronounced by the best judges of honey, to be one of the most luscious articles which they ever tasted, and will be, by almost every one, preferred to the unmixed honey. Refined loaf sugar is a perfectly pure and inodorous sweet, and one pound of honey will communicate the honey flavor to twice that quantity of sugar; while the new article will be destitute of that smarting taste which honey alone so often has, and will be found perfectly to agree with those who cannot eat the clear honey with impunity. If those engaged in the artificial manufacture of honey never brought anything worse than this to market the purchaser would have no reason to complain. As, however, the compound can be furnished much cheaper than the pure honey, many may prefer to purchase the material and to mix them themselves. If desired, any kind of flavor may be given to the manufactured article; thus it may be made to resemble in fragrance, the classic honey of Mount Hymettus, by adding to it the aroma of the lemon balm, or wild thyme; or it may have the flavor of the orange groves, or the delicate fragrance of beds of rose washed with dew."

How to ascertain the Distance of a Thunderstorm.—Place the finger on the pulse, and the moment the flash of lightning is seen, commence counting the beats. If you feel six pulsations before you hear the thunder, the storm is one mile away; if twelve pulsations, it is two miles, and so on.

THE MONTHS--FEBRUARY.

This month among the ancient Romans was the last of the year, in which they were accustomed to offer to the Gods expiatory sacrifices as an atonement for their year's transgressions. These oblations were called *Februalia*, from which was probably derived the present name of the month. The Saxons called it *Sprout-Kale*, from the circumstance of the cabbage tribe in the moderate climate of the British Islands, beginning to sprout during this month. It was afterwards changed to *Sol-Monath*, or *Sun-Month*; indicating the increasing influence of that luminary in awakening from the slumbers of winter both animals and plants.

This month has been variously represented by the painter, as a man habited in a dark or sky colored garment, holding in his hand the astronomical sign of *Pisces*, or the fishes. Among the Saxons it was pictured as a vine-dresser, engaged in the important act of pruning, as this needful operation is usually performed on the grape and fruit trees generally, at this season. In other pictures February is represented as a man clad in a white robe, with a wreath of snow drops around his head; indicating the continuance of stern winter's reign, with the cheering signs of approaching Spring.

Candlemas occurs at the commencement of this month, and is an ancient feast of the Church, in commemoration of the Purification of the Blessed Virgin. In England, this festival is still regarded by many of the older inhabitants, as a sort of seasonal epoch, by which they regulate some of their agricultural and domestic operations. This is only one of many instances which might be adduced, showing how our ancestors were guided in their rural pursuits by the ecclesiastical, as well as the natural year. At this festival a multitude of candles was used in the churches, during the celebration of public worship; (hence the name,) and the modest, delicate snowdrop, often peeping through the snow at this early season was designated, in the language of poetry and hope, as "our lady, or fair maid of February," and "Purification Flower." Mrs. Barbauld thus graphically describes this early messenger of Spring:—

> Already now the snow-drop dares appear,
> The first, pale blossom of the unripen'd year;
> As Flora's breath by some transforming power,
> Had changed an icicle into a flower.
> Its name and hue the scantless plant retains,
> And winter lingers in its icy veins.

St. Valentine's day bids fair to go down the stream of time with unabated popularity, and few young people need to be reminded of the precise period when it occurs. In England, the belief is still common that the pairing of birds takes place on this day; and how many amorous associations are connected with its observances! Birds in that climate begin to build and sing; several flowers and shrubs are opening their tender and modest petals, and the heart is thrilled with delight at these evidences of the welcome advent of spring. How few there are, who, after many years tossing on the waves of this troublesome world, can recall their early associations of the phenomena and observances of this season of hope, but with mingled feelings of pleasure and regret!

Shrove Tuesday quickly follows, and amidst the wreck of change, still maintains in the popular mind some of its ancient characteristics. It is said to have derived its name from the old Saxon word, *shrive*, signifying confession; in reference to an ancient and long abiding practice of the Church, as preparatory to a profitable observance of the season of Lent. A bell was rung in the Parish church on the morning of Shrove Tuesday to summon the people to their religious duties; a custom yet observed in a few of the quiet, rural places of old England, where the progress of modern changes in the feelings and habits of the people, is comparatively slow. After confession they were permitted to participate in recreations and festive amusements; but as meat was forbidden, pan-cakes or fritters were made and allowed as a substitute; hence the name of "pan-cake bell," and "pan-cake Tuesday," of which many of our readers, even in this "new world," continue to preserve some cherished memories and gratifying associations.

Our forefathers lived in a ruder age and exercised a larger faith than seems compatible with the spirit and tendencies of the present. Yet it fairly admits of a question, whether some of the characteristics of a simpler form of civilization were not better adapted to the promotion of social happiness and good neighbourly feeling; to health of body and real peace of mind; than the unceasing, feverish pursuit of wealth, and the undivided worship of mammon, which so painfully distinguish our own advanced times. The holidays and social gatherings, so common to "merrie England" in the olden times, were, it should be remembered, to a large extent, regulated by the ecclesiastical

year, and consequently associated with the more prominent points and duties of the deeply cherished faith of those early ages. It is true that in a ruder age such observances were too frequently marked by noisy and intemperate gratification, which unhappily has not departed either in form or spirit, from society in these modern days. In the present age, and on this North American continent in particular, the great social want among the masses is statedly recurring periods of leisure and recreation, so essential to the mental, moral and physical health of the countless number of workers in the crowded hive of this needy and busy world. It is only the consciousness of the Divine command, and the expediency, or rather perhaps, the physical necessity of a weekly cessation from daily toil, that the observance and hallowing influences of the Sabbath are perpetuated; a day too frequently recurring for avarice and cupidity, *willingly* to spare from the service of mammon. Manly and healthful sports and pastimes, while expressive of nationl character are intimately connected with the rational enjoyment and social and moral progress of a people. The frequent periodical fairs and markets of England are to the farmers and commercial men not merely scenes or opportunities for transacting business, but also occasions of friendly greetings and social intercourse. And it is much to be desired, both in a purely business as well as social point of view, that such opportunities should be made available to the people of this country. A beginning in some places has already commenced; and it is gratifying to observe any signs of a change, when the movement is in the right direction.

Although in England, February is more or less distinguished by unmistakable signs of the advent of Spring, in this conntry it is essentially a winter month, allowing of but little out-of-door occupation, and it is usually attended by heavy snow-storms and severe cold. The domesticated animals require all the attention which the farmer can bestow; warm housing, ample and regular feeding, with strict attention to ventilation and cleanliness, constitute the principal desiderata of this very important and not less interesting department of rural economy. Tusser who farmed and wrote near 300 years ago, observes in his February's husbandry:—

Good provender laboring horses would have,
Good hay and good plenty plough oxen do crave,
To haul out thy muck, and to plough up thy ground,
Or else it may hinder thee many a pound.

Who abuseth his cattle, and starves them for meat,
By carting or ploughing his gain is not great;
When he that with labor can use them aright,
Hath gain to his comfort and cattle in plight.

The threshing and marketing of grain forms a principal employment of the farmer at this season; and much mechanical ingenuity has been displayed in constructing machines for separating the grain thoroughly and economically. A really good threshing mill, built on approved mechanical principles is among the most valuable machines of modern agriculture, affording one among many instances that might be happily adduced, of the important aid rendered by mechanical philosophy to the pursuits of the Husbandman. Still in a poetical point of view, we cannot afford wholly to lose the employment of the flail. The appearance and sound of the thresher is peculiarly characteristic of rustic life at this season; and the use of that primitive implement, even among ourselves, may yet be occasionally and economically continued during the inclement months of our protracted winters. Cattle eat more readily newly threshed straw, and by threshing smaller quantities by hand, the chaff and offal may be thoroughly consumed. How expressive are the words of Bloomfield, in his Farmer's Boy:—

Though, night approaching, birds for rest prepare,
Still the flail echoes through the frosty air,
Nor stops till deepened shades of darkness come,
Sending at length, the weary laborer home.

Winter has been denominated *the Sleep of Nature*, and its characteristic phenomena well accord with this expressive figure of speech. It is the termination of the past and the hopeful precursor of the future; in fact a sort of transition period, for restoring strength and devising new achievements to be won on the wide field of human thought and enterprise. Nature is now indeed in a state of tranquil repose. Most of the feathered tribe have left us for more genial climes; a profound silence reigns in the woods, and the landscape is enveloped in a pure covering of white. Insects and many animals are close and safe in their winter quarters, in a state of torpidity, and consequently insensible to the cold and pitiless storm raging around. How admirable are the arrangements of the wise and beneficient Creator, all tending to the safety and enjoyment of his innumerable creatures!

"Tired nature's sweet restorer, balmy sleep."

Operates not merely as a passive agent in recruiting strength, mental and physical, after care-worn. The vital organs continue the action of their usual functions, asleep as well as

awake, although in a modified degree; and the slumberer awakes in the morning, refreshed and invigorated, and becomes fitted for the duties of the coming day. Equally so is it with nature; the sleep or quiescence of winter is only preparing her on the return of increasing light and warmth, to burst forth into renewed life and beauty at the approach of spring. Nature knows nothing of absolute death; or in other words, neither mind nor matter admit of annihilation. What seems destruction is really only change, the process being often too subtle for physical sense to trace or even detect. Results, however, prove the uniformity and permanency of the natural laws; and that under the care of a creative Providence, "While the earth remaineth, seed-time and harvest, heat and cold, summer and winter shall not cease."

"He marks the bounds which winter may not pass,
And blunts his pointed fury; in its care,
Russet and rude folds up the tender germ
Uninjured, with inimitable art;
And, ere one flowery season fades and dies,
Designs the blooming wonders of the next."

DEPTH OF DRAINS.

It seems that general opinion has not yet settled on any particular depth as most proper for drains. In England, where the subject has attracted much attention, no rule has been agreed on. At a late meeting of the London Farmers' Club, a lecture was given on drainage, by Mr. Denton, in which a uniform depth of four feet was contended for, though the lecturer admitted that some persons, whom he regarded as "high authorities," had successfully drained stiff clays at from twenty to thirty inches deep.

Mr. R. Baker cited a case where a hard, chalky clay had been drained several years ago, by cutting ditches twenty to thirty inches deep, and filling them with wood and a little straw at top. On such compact soil the drains remained open after the materials had decayed.

Mr. B. Webster was convinced by experience, that on retentive clay subsoils not surcharged with under-water, a depth of three feet, at moderate distances, was more efficacious than a greater depth.

Mr. Thomas said, having drained at various depths, he had invariably found that where the soil was of a tenacious consistency, drains three feet deep kept the land perfectly dry, and left at harvest-time a continued and unbroken level of corn crop; so that practiced husbandmen could not tell where springs were or where they were not. In a little field of five acres, the drains were four feet deep and forty feet apart; but what was the result? In that field he had never grown more than three quarters of corn per acre, and three-fourths of the land was often under water. He had now had the land gathered up into its old form, and was about to have drains made three feet deep. It might be true that certain roots extended to a depth of eight or nine feet; but it was not on that account to be supposed that the land would repay the cost of drainage of proportionate depth.

Mr. W. Bennet, viewing the question practically, was of the opinion that the truth lay between the two extremes. The result of his own experience was, that in an open porous soil, with a good outfall, they could hardly go too deep; but this did not apply to strong tenacious soils.

Mr. Stokes said he had seen a good deal of draining done in Nottinghamshire and Leicestershire, and was decidedly of opinion that four-feet draining was the most effectual that could be adopted, provided the drains were not placed too far apart.

Mr. Wood quite admitted that four-feet drainage was superior in itself to drainage of less depth; but, after calculating the difference of cost as between three feet and four feet, he had arrived at the conclusion that the former answered the purpose best.

The Chairman said, having been himself for many years connected with draining, and having done a great deal on the farm which he occupied, he could not refrain from giving a faint outline of his experience. With regard to stiff, tenacious clays—he meant those clays which contained no stone, which were not at all calcareous, and which, if a dish were made of them in the shape of a bowl, would hold water in the same way that a bowl did—his experience led him to the conclusion that the best way of draining such clays was to make the drains three feet deep, and eighteen feet apart.

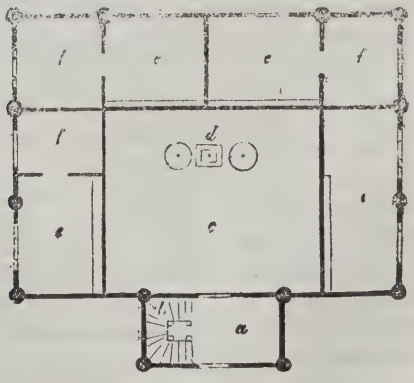
☞ DURHAM STOCK.—We would beg to direct the attention of our readers to Mr. Fisher's advertisement in another column, relating to young Durham Bulls, which he has for sale.

A PIGGERY.

The hog is an important item of our agricultural economy, and his production and proper treatment is a valuable study to all who rear him as a creature either of profit or convenience. In the western and southern states, a mild climate permits him to be easily reared and fed off for market, with little heed to shelter or protection; while in Canada, he requires care and covering during winter. In all places the hog is an unruly, mischievous creature, and has no business in any other place than where he can be controlled, and kept at a moment's call.

His proper place is in the sty, particularly when feeding for pork. We give in this number the plan of a piggery such as may be economical in construction, and convenient in its arrangement, both for the swine itself, and him who has charge of him.

PIGGERY.



GROUND PLAN.

The design here given, is for a building, 36 feet long, and 24 feet wide, with twelve-feet posts; the lower, or living room for the swine, 9 feet high, and a storage chamber above, for the grain and other food required for his keeping. The roof has a pitch of 40° from a horizontal spreading over the sides and gables at least 20 inches, and coarsely bracketed. The entrance

front projects 6 feet from the main building, by 12 feet in length. Over its main door, in the gable, is a door with a hoisting beam and tackle above it, to take in the grain, and a floor over the whole area receives it. A window is in each gable end. A ventilator passes up through this chamber and the roof, to let off the steam from the cooking vats below, and the foul air emitted by the swine, by the side of which is the furnace chimney, giving it on the whole, as respectable an appearance as a pigsty need pretend to.

INTERIOR ARRANGEMENT.

At the left of the entrance is a flight of stairs, (*b*,) leading to the chamber above. On the right is a small area, (*a*,) with a window to light it. A door from this leads into the main room, (*c*,) where stands a chimney, (*d*,) with a furnace to receive the fuel for cooking the food, for which are two kettles, or boilers, with wooden vats, on the top, if the extent of food demands them; these are secured with broad wooden covers, to keep in the steam when cooking. An iron valve is placed in the back flue of the furnace, which may fall upon either side, to shut off the fire from either of the kettles, around which the fire may revolve; or, the valve may stand in a perpendicular position, at will, if both kettles be heated at the same time. But, as the most economical mode is to cook one kettle while the other is in process of feeding out, and *rice versa*, scarcely more than one at a time will be required in use. Over each kettle is a sliding door, with a short spout to slide the food into them, when wanted. If necessary, and it can be conveniently done, a well may be sunk under this room, and a pump inserted at a convenient place; or if equally convenient, a pipe may bring the water in from a neighbouring stream or spring. On three sides of this room are feeding pens, (*e*,) and sleeping partitions, (*f*,) for the swine. These several apartments are accommodated with doors, which open into separate yards on the sides and in rear, or a large one for the entire family as may be desired.

CONSTRUCTION.

The frame of this building is of strong timber, and stout for its size. The sills should be 8 inches square, the corner posts of the same size, and the intermediate posts 8 x 6 inches in diameter. In the centre of these posts, grooves should be made, 2 inches wide and deep, to receive the *plank* sides which should be 2 inches thick, and let in from the level of the chamber by a flush cutting for that purpose, out of the grooves inside, thus using no nails or spikes, and holding the planks tight in their place, that they may not be rooted out or rubbed off by the hogs, and the inner projection of the main posts left to serve as rubbing posts for them—for no creature so loves to rub his sides, when fatting, as a hog, and this very natural and praiseworthy propensity should be indulged. These planks, like the posts, should, particularly the lower ones, be of *hard* wood, that they not be eaten off. Above the chamber floor, thinner planks may be used, but all should be well jointed, that they may lie snug, and shut out the weather. The center post in the floor plan of the engraving is omitted, by mistake, but it should stand there like the others. Inside posts at the corners, and in the sides of the partitions, like the outside ones, should be also placed and grooved to receive the planking, four and a half feet high, and their upper ends be secured by tenons into mortices in the beams overhead. The troughs should then, if possible, be made of *cast iron*, or, in default of that, the hardest of white oak plank, strongly spiked unto the floor and sides; and the building may then be called hog proof—for a more unquiet, destructive creature, to a building in which he is confined, does not live, than the hog. The slide or spout to conduct the swill and other feed from the feeding room into the trough, should be inserted through the partition planks, with a steep *slant* the whole length of the trough, that the feed may be readily thrown into any or all parts of it. This slide should be of two-inch white-oak plank, and bound along the bottom by a strip of hoop-iron, to prevent the pigs from eating it off—a habit they are prone to; then, firmly spiked down to the partition planks, and through the ends, to the adjoining studs, and the affair is complete. The timber and lumber used must be sound and strong; and then, properly put together, it may defy their most destructive ingenuity. Of the separate uses to which the various apartments may be put, nothing need be said, as the circumstances of every farmer will best govern them.

One, to three hundred dollars, according to price of material and labor, will build this piggery, besides fitting it up with furnace and boilers. It may be contracted or enlarged in size as necessity may direct; but no one with six to twenty porkers in his fatting pens, a year, will regret the expense of building a convenient appurtenance of this kind to his establishment.

L. F. Allen, from whose book we have copied the foregoing plan, makes the following remarks:

"A word may be pardoned, in relation to the too universal practice of permitting swine to prowl along the highways, and in the yards and lanes of the farm house. There is nothing so slovenly, wasteful, and destructive to one's thrift, and so demoralizing, in a smalll way, as is this practice. What so revolting to one, of the least tidy nature whatever, as a villanous brute, with a litter of filthy pigs at her heels, and the slimy ooze of a mud-puddle reeking and dripping from their sides? See the daubs of mud marking every fence-post, far and near, along the highway, or wherever they run! A burrow is rooted up at every shady point, a nuisance at every corner you turn, and their abominable snouts into everything that is filthy, or obscene—a living curse to all that is decent about them. An Ishmaelite among the farm stock, they are shunned and hated by every living thing, when at large. But, put the creature in his pen, with a ring in his nose, if permitted to go into the adjoining yard, and comfortably fed, your pig, if of a civilized breed, is a quiet, inoffensive—indeed, gentlemanly sort of animal; and as such, he is entitled to our toleration—regard, we cannot say; for in all the pages of our reading, we learn no creditable history, or any virtuous sympathies in a hog."

THE OSAGE ORANGE.

Hedge Plants.—The osage orange, which has been recommended by a number of writers as a plant well fitted for hedges, is a native of the south-western States. It grows in great abundance in a wild state in Arkansas, where it takes more the form of a tree than a shrub, growing to the height of thirty or forty feet, with a wide spreading head. For which reason it is evidently unfitted for a hedge except by constant severe trimming. It has been found hardy enough to stand the winters as far north as where the Isabella grape is found to ripen its fruit. It grows well in the latitude of Detroit. It grows rapidly, the frost only affecting the young shoots which have to be trimmed off in the spring. Plants are easily grown from seeds, and are very hardy. A quart of seed will produce a thousand plants. Put them in the ground in October, and transplant a year from the next spring. The principal objections to the osage orange are that it grows too vigorously, especially in rich ground, and that after the first five or six years it will take too much labor to keep it trimmed and within bounds. It is also a most greedy absorber of all the nutriment in the soil within reach of its long roots. It is the opinion of many farmers that hedges are not economical in this country. This shrub will grow in Canada West, we believe.

GRAIN BREAKERS.

A correspondent writes us as follows:—"In this part of the country many of our people are situated at inconvenient distances from mills; if you or any of your readers, through the *Agriculturist*, could inform us what kind of Grain Breaker is the best, and where it can be procured, price, &c., worked either by hand or one or two horses, we should feel obliged."

Will such of our readers as have had experience in the use of these machines favor us with their opinions and advice? There are several kinds of these machines made in England, which work well, and have been extensively exported to the southern colonies. We have been led to form a less favorable opinion of the few which we have seen on this continent. Still that there are machines to be found that will do their work satisfactorily hardly admits of a doubt.

ALLEGED COAL AT QUEBEC.

It seems that though other diseases afflict the earth for a time and then leave it, the plague of credulity is one that never ceases to torment mankind. The hope of finding hidden treasure; the belief in the possibility of discovering riches by means of the divining rod, and all the other mysteries of under-ground adventure never appear to grow stale. Science daily proves its title to confidence, and yet people who are not scientific, will place their trust in quacks and charlatans, or in half-informed persons, who have no reputation except what they gain by sounding their own trumpets, rather than in men whose knowledge has been tested in the most unquestionable manner. Thus the race of the Dousterswivels is constantly maintained, because there are always dupes who are ready to promise treasures, if only the would-be posssessors of the god-send will pay more than it is worth for finding it.—These reflections have been suggested to us by the excitement just now taking place at Quebec, on account of a pretended discovery, for the simple reason that it is no discovery at all; all that has lately been so prominently brought before the public, having been described by the Provincial Geologist, as common to the hills of Quebec many years ago. This fact no one can doubt longer, after reading the following paragraphs from the report of the geological survey of the year 1844.

1. The lowest in the neighborhood of the Chat are seen at a projecting point of land between it and the St. Anne River, where a considerable extent of strata are laid bare at the ebb of tide. The strata are highly tilted, and several dislocations occur; but it can be made out, that, based upon a strong bed of gray oolitic limestone, ten or fifteen feet thick, with a thinner one a short distance above it, consisting of flat calcareous pebbles lying on one another as if carefully packed on their sides, there reposes a mass of thin-bedded, dark-gray, yellow-weathering limestone separated by thin bands of black bituminous shale, with occasional thicker beds of the shale holding calcareo-arenaceous nodules or isolated masses, becoming very conspicuous in a considerable bed of bitumino-argillaceous shale at the top, where the nodules or patches sometimes resemble septaria, and are occasionally composed of a dull olive gray chert, weathering to a dingy red, *in which the cracks or veins hold a mineral undistinguishable in its general appearance and combustible nature from good sea-coal.* * *

The whole of the deposits given amount to about 1140 feet in thickness, and the distinguishing features they present are the bands of conglomerate limestone, and the *bituminous mineral so much resembling coal.* This is found not only in the septa of the cherty nodules which have been mentioned, but also in many small cracks across the strata, and in more parts than one of the vertical thickness. A similar mineral, in an analogous position, is found in the rocks at *Point Levi and Quebec, and in the museum of the Quebec Natural History Society a block of it, procured in the neighbourhood, containing about a cubic foot, is preserved.* Some have been inclined to suppose that it might indicate the proximity of workable coal, and indeed I have been asked whether a mine upon it, in a position which I have not yet seen, but where according to information received, a cart load of it has been obtained, would be likely to be successful. Now none of the material where it has come before me in situ, bears any analogy in the mode of its occurence to workable coal. This is always found in extensively continuous beds conformable with the stratification; whereas the mineral in question occurs in cracks cutting the strata across for greater or less distances.—It is true that where faults or dislocations exist among coal seams, there is often met with running across the stratification what by Scotch miners is termed a *vise,* and by Welsh, a *leader* of coal, which in general is a thin, contused, irregular interrupted black more or less carbonaceous sheet, conducting up or down, as the case may be, in the plane of dislocation, from the termination of a coal-bed on one side to that on the other; and there is no doubt it is the result of the grinding of the terminal edges of the strata against one another, when the slip producing the dislocation occurred. Without a slip or displacement, therefore, no leader would be found, and none in any case would hold true coaly matter extending beyond the distance between the separated edges of the coal-bed. Now in the case of the bituminous mineral, the cracks in which it occurs are, in many instances, unaccompanied by any displacement of the strata, and in others, where the extent of the dislocation (that is the upthrow or downthrow, as it is called) is visible, no layer holding any of it occurs among the beds. Independent of all this, the formation in which the mineral is found, is an inferior member of a group of rocks, whose place is in all probability a very considerable distance below the position of the true workable coal-bearing measures, and we are, therefore, not warranted in expecting coal seams to exist in it. The rock is supposed to be the equivalent of a part of the Hudson River Group of the New York geologists.

But this plain straightforward story is not satisfactory to the City Council of Quebec, when they are told that the worthless shale is a coal mine. They forthwith set the treasure finder on an investigation, who tells them he can do nothing until the fine weather comes, and in the meantime begs them not to allow any one to touch the least bit of the valuable mineral, lest he should lose the trace of it, and then of course the whole would vanish after the same fashion as the doubloons, which wizards made the devil bring into the enchanted circle to their patrons; but which were never safe until every magic rite had been exactly fulfilled. We pretend to no scientific knowledge; but it requires no such knowledge, to be able to laugh at such ridiculous pretensions as these. Everybody knows that Sir R. Murchison predicted the probable discovery of the Australian gold mines from the other side of the world, so soon as he knew the character of the more obvious geological features of the country. He wanted no trace. And so it is with all kinds of minerals. The crust of the earth is composed of many distinct layers, one above the other, which are always found in the same order, though they are not always all present in the same localities. For instance, suppose we describe these deposits as 1, 2, 3, 4, 5, 6; 6 representing the upper layer, it is possible to find 1, 3, 5, 6, or 2, 4, 6, or any greater or less number of the deposits; but the order is never changed, 6 never goes to the bottom, nor one to the top. Now the reasoning to which this fact gives rise is obvious. Suppose 5 to represent the coal strata, if the surface of the earth in any one place be composed of the layer 4, or any number lower than that, we are sure no coal is there. It is known that it can only occur between layers five and six, and though it may not necessarily be there, when we have these two strata, it is very certain it cannot be present, where they or higher strata are absent.

Such in a rough way, is a description of the principles upon which geologists proceed, and they ought to be sufficiently known to every man of ordinary information to save him from being led into folly, when competent and even eminent persons, having no interest certainly against the discovery of coal, state that it does not exist.—We have a constant repetition of this cry from one end of the Province to the other, and when it is originated by a farmer or a backwoodsman, who has found something like coal upon his land, we can feel no contempt for his desire to have the truth discovered; but for the people of the second largest city in the Province, officially by their Council, to write themselves down asses is something that must reflect anything but credit on the intelligence of Canada.—*Mont. Herald.*

☞ Pomological.—We have to thank the Hon. Marshall P. Wilder, of Massachusetts, President of the American Pomological Society, for a copy of the Report of the proceedings of the Society at its third Session, held in Boston, in September last. It is a pamphlet of 258 pages, and contains most valuable information, which we shall be glad to make use of in future numbers.

MARKET REVIEW.

CANADIAN, AMERICAN, ENGLISH AND FOREIGN.

We have resolved to present monthly in the *Agriculturist*, a brief review of the market prices for Agricultural produce in the principal marts of the world. As information to the farmer, such a review cannot but be interesting, and as reliable data to guide his own market operations, it must prove *useful*. We shall bring our statement down to the latest dates before going to press, and shall take our figures from the most reliable sources. We hope that by devoting a page or so to such a record, the value of the *Agriculturist* will be considerably increased.

TORONTO RETAIL MARKETS.

FEBRUARY 3, 1855.	s.	d.	s.	d.
Flour—Millers' extra superfine, per bbl	40	3 a	41	3
Farmers', per 196 lbs	35	0 a	37	6
Wheat—Fall per bushel, 60 lbs	7	0 a	7	6
Spring, per bushel, 60 lbs	0	0 a	0	0
Oatmeal, per barrel	38	9 a	40	0
Rye, per bushel, 56 lbs	6	9 a	7	0
Barley, per bushel, 48 lbs	4	2 a	4	6
Oats, per bushel 34 lbs	2	9 a	3	0
Peas, per bushel	3	9 a	4	6
Potatoes, per bushel	2	9 a	3	0
Apples, per barrell	6	3 a	8	9
Grass Seed, per bushel, 48 lbs	5	9 a	8	9
Clover Seed, per bushel	30	0 a	32	9
Hay, per ton	100	0 a	140	0
Straw, per ton	50	0 a	60	0
Onions, per bushel	7	6 a	0	0
Butter—Pub, per lb	0	9 a	1	0
Fresh, per lb	1	0 a	1	3
Lard, per lb	0	7 a	0	8
Cheese, per lb	0	5 a	0	0
Pork, per 100 lbs	25	0 a	30	0
Fresh, per lb	0	5 a	0	0
Beef, per 100 lbs	25	0 a	27	6
per lb	0	6 a	0	7½
Hams, per 100 lbs	45	0 a	50	0
Bacon, per 100 lbs	45	0 a	50	0
Firewood, per cord	25	0 a	30	0

Remarks, Feb. 2.—Within the last week there has been a marked decline in wheat and flour. The scarcity of money, and the prospect of peace from the negotiations now going on, are probably the cause. The quantity coming to the Toronto market is very small and transactions dull. The most common price is 7s. 6d. per bushel. Hay is plentiful but prices keep up remarkably. Well cured Timothy has sold as high as high as $29. Pork comes in plentifully and sells briskly at $5½ a $6 per 100 lbs. Demand greater than supply.

We have heard lately, of a practice among millers of taking farmers' wheat at the highest prices going, and paying, not in *money*, but receipts or due bills. We would advise our readers to eschew such a practice. They had better keep their wheat in their barns When the country is passing through a commercial crisis it is hard to say who is solvent. We have known many heavy losses that might have been avoided by a little prudence. Wheat is as good as money and ought to bring the *cash*, or remain in the granery.

MONTREAL.

Review for week ending January 27.

Flour.—The transactions for the week have been few, and without any marked alteration in prices, which, however, have rather favored buyers; 1,600 barrels fair quality No 1 Superfine were taken at 47s 6d. On Thursday a lot of 500 barrels, without going into storage, was bought for 47s 9d per barrel, since when a few odd parcels good brands fetched 48s.

Wheat.—No large lots in the market.

Prices for other kinds of grain and provisions almost nominal.

Hamilton, Feb. 1st.—The latest quotations in the local papers are for Wheat, 7s 6d to 7s 9d; Barley, 3s 9d to 4s; Oats, 2s 4d to 2s 9d; Beef, per 100 lbs. 25s to 35s. Pork, per 100 lbs. 25s 6d to 32s 6d; Hay $15 to $20 per ton.

Galt, Jan. 31st.—The local papers quote wheat at 7s 6d. Flour 20s; Oats 2s 2d; Peas 3s 9d to 4s: Pork 18s to 26s per 100 lbs. Clover Seed 40s to 42s 6d per bushel.

NEW YORK MARKETS.

Flour and meal.—Jan. 24th.—The markets opened rather lower for the low grades of State flour, but at the close was firmer, with a better demand for export and the East. With more seasonable weather, and less prospect of the resumption of river navigation, a better feeling is apparent. The better grades are in good request, but at very irregular prices. The arrivals are still liberal, but those in prospect are not so large: The sales of Western Canal are 7 200 bbls. at $3 18½ a $8 37½ for common to good State; $8 62½ a $9 for mixed to good brands Upper Lake, Michigan, Indiana, and common to good Ohio; and $10 50 a $12 for extra and double extra Genesee. Canadian Flour is without material change at the close although rather heavy early in the day; the demand is for for the British Provinces; sales of 1,500 bbls., closing at $9 in bond, and $9 50 a $9 75 duty paid.

Grain.—The market is without variation for Wheat; the demand is limited and the supply moderate of prime; the inquiry is mainly for milling; we have only to note a sale of 400 bushels prime white Michigan, at $2 45, an extreme price. Rye is quiet and is nominal, at $1 30 a 1 35. Barley and Barley Malt are inactive, and qotations would be nominal. Oats are in better supply, and in good demand, at 59 a 63½c, for State and Western, and 59 a 53 for Jersey. Corn is firm, with less offering; the demand is good for shipping and the home trade; old is quiet, at $1 for Western, in store; the sales are 29,000 bus., at 94 a 95c for Southern mixed and new damp Jersey; 98 a 97c for Southern white; and 96c for Southern yellow.

Provisions.—The market is better for Pork, the demand fair for shipping and the trade; sales of 3,000 bbls. at $12 37 a 12 50 for old mess, $12 25 a 12 37½ for old Prime, $14 12½ a 14

87½ for new Mess. $13 18¾ a 13 25 for new Prime. $14 25 a 15 25 for Western Prime Mess. and $16 for City Prime Mess; included in the sales are 1,400 bbls new mess, for May and June delivery, part of not all at $14 50, and 1,200 bbls Prime Mess' mainly country, at $14 50 for uninspected.

Latest by Telegraph.

NEW YORK, February 2.

FLOUR—Common grades, market dull and drooping; other grades unchanged. Sales, 5000 bbls $8 25 *a* $8 50 for common to good state; $8 63 *a* $9 25 for Western. Sales, 600 bbls Canadian, $9 25 *a* $9 75 duty paid.

WHEAT quiet, small sales; prime white Michigan, $2 40.

ENGLISH MARKETS, &c.

LIVERPOOL, January 13th, 1855.

AVERAGE PRICE OF GRAIN IN ENGLAND.

Per Qr.	Wht.	Barly	Oats.	Rye.	Bns.	Peas	Flour
Nov. 25	74 7	35 6	29 3	44 11	50 5	49 7	0 0
Dec. 2	74 4	35 10	29 0	45 3	50 2	49 4	0 0
Dec. 9	73 0	35 2	28 4	46 2	49 5	49 6	0 0
Dec. 16	72 3	34 6	28 6	47 4	48 9	48 3	0 0
Dec. 23	72 4	33 8	27 4	46 0	47 10	46 11	0 0
Dec. 30	74 4	34 1	27 10	47 1	47 3	46 8	0 0
Aggregate Average of the Six Weeks.	73 4	34 10	28 4	46 1	49 0	48 4	0 0
Liverpool Averages Dec. 25 1854	78 8	35 4	28 5	43 0	0 0	0	47 6	0 0

January 14.

The renewal of peace negotiations has already exercised a marked effect upon the Grain markets in all parts of the kingdom, causing almost an entire absence of transactions, and prices have consequently considerably declined. At Mark Lane Wheat has been unsaleable, except at a fall of 2s to 3s, Hull 4s; Newcastle, 3s 6d; and Wakefield, 2s per qr. All other articles declined in proportion. Our own market during the early part of the week was extremely depressed, and wheat declined 4d to 6d per bushel; Flour 1s to 2s per barrel and sack; Indian Corn 1s to 2s; and Oatmeal 1s per load lower. To-day however the tendency to decline was effectually arrested, and prices were steady. A portion of the decline on Indian Corn was recovered.

The following are given as current prices at latest dates Canadian readers will bear in mind that they are expressed in sterling:—*Irish Butter*, holders generally are firm, and require for Cork 100s Limerick 88s to 95, Carlow, Clonmel, and Kilkenny 96s to 100s, Sligo 90s to 98s, and Waterford 90s to 96s. Foreign in plentiful supply, with a better sale. *Bacon* has been dealt in with more freedom, and rates are now firm; Irish at 54s to 62s, according to quality, and Hambro 58s to 60. Middles wanted; Irish at 54s to 58s, and American 36s to 42s. Few buyers of *Lard*; sellers of Irish bladdered at 65s to 72s, keg and firkin 56s to 61s, and American 54s to 56s. *Hams* are a slow sale, Irish at 70s to 80s, and English 96s to 104s. A quiet market for *Cheese*, Edam 48s to 55s, Gouda 40s to 48s, and American 57s to 62s. In ships' Provisions there are greater operations, with much firmness in the market. Prices rule for prime India *Beef* at 175s to 185, Mess from 80s to 150s. *Pork*, Irish India 180s to 185s, per tierce, and Mess 95s to 105s per bbl.

BELFAST.—Oats, 7s 6d to 8s 9d; wheat, red, 13s to 15s 4d; oatmeal, 14s to 14s 4d per cwt; pork, 48s to 52s 6d per 120lbs; butter, crock 10d to 10½d, lump 10d to 11d, firkin 10d to 10½d, white firkin 10½d to 11d per lb; flour, extra superfine 28s 6d, bakers' superfine 28s 6d, first 26s 6d, second 25s 6d, third 17s 6d, fourth 12s 6d per cwt; bran, 7s 3d per cwt; beef 5d to 7d; mutton, 6½d; veal, 7d; ham, 9d; bacon, 8d per lb.

GLASGOW.—Flour and Grain. Owing to the negotiations for peace, now apparently assumed by the Czar, trade continues dull, and prices declining, and to effect sales in quantity considerably lower rates would have to be accepted. These are reduced in the meantime 1s per boll on wheat, and 1s 6d per brl on Flour. Land is dull of sale. Provisions quite nominal. Rice inquired for. Tallow is quiet.

LONDON CATTLE MARKET.—Jan. 12.—To-day's market was well supplied with Beasts. For all breeds we have had very inactive demand, at barely Monday's prices. The Supply of Sheep moderate, and the sale for them dull at unaltered currencies. Supply of Calves small and moved off slowly at barely late rates. Very little doing in pigs at former terms. Milch Cows, including small Calf, very dull, at from £14 to £19 each. Prime large Oxen 4s to 4s 4d per 8lbs.

CONTINENTAL.—At the Baltic ports the frost had not at last accounts interfered with business, but the supplies from the interior were very limited. Wheat generally commands high prices, and small shipments are still made for England. At Stettin good runs of red wheat realise 61s 6d to 62s per qr f o b; and for spring delivery 63s to 63s 6d per qr f o b are the prices. Mixed white Polish on the spot 62s to 64s per qr. Barley 32s to 33s per qr for 52 to 53lbs per bushel. At Dantsic the stock of Wheat is the lowest held since 1813. Trade was dull without change in prices. Our advices from Hamburg report a very slow trade, but offers continuing moderate prices were pretty firmly maintained. Wheat on the spot was quoted as follows;—Mecklenberg, weighing about 59½lbs per bushel, at 67s 9d per qr of 480lbs; ditto, of about 61lbs per bushel, at 72s 6d per qr of 496lbs; Holstein, of about 59lbs per bushel at 66s per quarter of 480lbs; marks, of about 60lbs per bushel, at 69s per qr of 480lbs. Parcels shipping from the outports somewhat easier to buy. At Antwerp the grain trade was dull, but prices of wheat are supported, and the supplies which are brought forward by the farmers are readily taken off for home consumption. The demand for white Zealand Wheat for England continues, and an advance of 1s to 1s 6d per qr has been conceded. There is much firmness in the French markets for both Wheat and Flour; both articles are slightly dearer.

A WEEK LATER!

The arrival of another Steamer as we are going to press puts us in possession of Liverpool and London Market prices to the 20th of January. The Markets had been generally dull during the week, but an improvement at Liverpool of 2d. on Wheat and 6d. per barrel on Flour is noted. At London Wheat had advanced from 1s. to 2s per quarter. Provision trade active.

CONTENTS OF No. 2.

	PAGE.
Township of York Farmers' Club—Essay on Manures	33
Smithfield Cattle Show, Account of	40
Birmingham Cattle and Poultry Show	43
Winter Ploughing and Rotation of Crops	45
Feeding Sheep, Experiments in	46
Foot-Rot and Scab	47
Cutting Roots for Sheep	47
Fruits and Fruit Culture	47
Cost and Profit of Apple Orchards	48
Quinces and their Cultivation	48
Shaker Specific for the Pear Tree	48
Pruning Trees—Valuable Hints	48
Plums in Wisconsin	48
Hop Growing in the United States	49
A Premium Orchard	49
British Agriculture. Report of W. Hutton, Esq. on	50
Unburnt Bricks for Houses—Communication	53
New Volume of the American Herd Book	53
How to make much Honey of a little	54
How to ascertain the Distance of a Thunder Storm	54
The Month of February	55
Depth of Drains—Discussion on	57
A Piggery—Description of, with Engraving	58
Osage Orange as a Hedge Plant	60
Grain Breakers	60
Alleged Coal at Quebec	60
Market Review—Canadian, American, English and Foreign	62

THE

CANADIAN AGRICULTURIST,

IS PUBLISHED MONTHLY, at Toronto, Upper Canada, and devoted to the improvement of *Agriculture, Horticulture, Farm Mechanics* and to the advancement of the *Farmers' Interests generally.* It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c. and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, besides Editorial and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributers to this journal.

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production*, and asks no man's support under a false name. It is a true, not a spurious *Canada Farmer.*

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☞ Newspapers inserting the above will do us a favor, and entitle themselves to a copy without exchange.

WM. McDOUGALL,
Publisher, Toronto.

January, 1855.

DURHAM BULLS.

THE SUBSCRIBER has several yearling Durham or Short-horn Bulls for sale, from the most renowned breeds ever imported into this country. Parties wishing to purchase will please call.

P. FISHER.

Nelson, 25th Jan., 1855. 2-3

SHORT-HORN BULLS.

R. WADE, JUNIOR, of Cobourg, has Five Young DURHAM BULLS for Sale, and would be glad of a call from parties wishing to purchase.

Cobourg, January 1, 1855. 1-3

ENGLISH HORSES!

FOR SALE.

BY Order of the Executors of the late CHARLES COOPER, *Two Superior Agricultural Stallions, imported by him, each three years old.*

For pedigree and particulars enquire of William Rowland, Centre Street, or of

W. B. CREW,
Toronto Street.

Toronto, Jan. 15, 1855. 2-tf

STALLIONS FOR SALE.

THE Subscriber now offers for sale TWO VERY SUPERIOR STALLIONS, one will be six years old next May, he has taken nine premiums; took the first in Toronto, at the Provincial Show, 1852; the other will be four next June, he took the second in Hamilton at the Provincial Show, 1853. They were both sired by the far-famed old Clyde, who, when he was on the sod far surpassed any horse that ever came against him. Their dam is a very superior Mare. For further particulars apply to the subscriber

WM. WADDELL,
Pickering, Claremont P. O., C. W.

Dec: 16th, 1854. 1-3

FRUIT TREES, EVERGREENS, &c.

T. C. MAXWELL & BROS., ask the attention of those wishing *Trees* and *Nursery Articles* the coming Spring, to a few *Thousands* each of *Apple, Cherry, Standard* and *Dwarf Pear Trees*, and a good assortment of *Peach, Plum, Apricot*, and *Quince Trees*, and the *smaller fruits. All very thrifty and* HEALTHY.

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Digging and packing done in the best manner.

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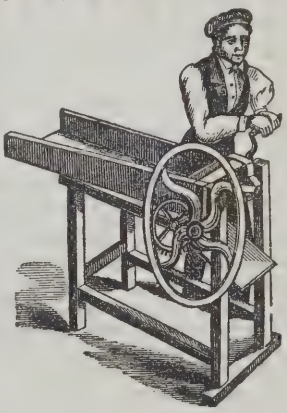
PATENT STRAW-CUTTER



IS now offered for Sale at McINTOSH, WALTON & Co.'s Yonge-street,—price Twenty Dollars. To prove its preference it is only required to test its work and durability. The castings fit so as one rod secures the whole together, and can be placed on the frame (a plain one) secured by two bolts, without anyfurtherfitting or any possibility of its getting out of gear or order.

Persons wishing to manufacture them can have any reasonable trial required.

For Patents apply to

JOHN BROWN,
126 *Yonge Street, Toronto.*

☞ AGENT FOR PATENTS.

Toronto, December, 1854. 1-4m

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PATENT SEED-SOWER

WILL be found for sale at McINTOSH, WALTON & CO'S., Yonge-street, price five dollars. Sows Clover or Timothy Seed broad-cast, ten (or more) feet with any required quantity per acre. Also without any alteration will sow Turnip Seed in rows—can be set to any distance apart—can be used no matter how rough or stumpy the land—will be more convenient and expeditious for either Broadcast or Rows than any other mode. Parties wishing to manufacture can have any reasonable trial. For Patent, App v to

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126 *Yonge Street, Toronto.*

Toronto, December, 1854. 1-6m

THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

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VOL. VII. TORONTO, MARCH, 1855. No. 3.

Agriculture, &c.

GUELPH FARMERS' CLUB.

SUBJECT—ORCHARDS.

A monthly meeting of the above club was held at the town of Guelph in January last—the President, Col. Saunders, in the chair.

The attendance was better than usual. The subject for discussion was—"The advantages of cultivating orchard fruits, and the best mode of planting and treating them," which was ably introduced by John Caulfield, Esq., as follows:—

Mr. President and Gentlemen,—

The subject for discussion this evening is the planting and management of Fruit Trees, and the advantages of raising Orchard Fruit. The few remarks I wish to make are from my own observation and experience, and I fear you will find them very imperfect, and not of that importance the subject deserves.

Persons intending to plant Apple Trees, (as I suppose our remarks will chiefly relate to them) should see that their ground is in good tilth and well dranied, either naturally or artificially, otherwise wait till it is so—as it is of no use trying to raise an Orchard unless the soil is in a good state of cultivation. If the land has been properly tilled previously, then dig the holes for the reception of your Apple Trees, 33 feet apart; of such dimensions as to admit of a layer of the top soil in the bottom of the holes, and that the roots may be spread out as they were in the Nursery-bed. After the holes are prepared, the great object is to get suitable Trees, and the best way is to go or send some competent person to a respectable Nurseryman to select good, thrifty, well proportioned Trees of good size; and leave the thriftless rubbish no matter how cheap you can obtain them—as the best kinds occupy no more ground than the very worst. Still, some prefer to purchase Trees from Tree pedlars, some eight or nine months beforehand giving them a written agreement to take their Apple Trees, and giving them also ample time to buy up the refuse of the Nurseries wherever they can find them. If the pedlar cannot find Trees to suit his purpose he can sell his orders to the best purchaser. After the Trees are dug up, tied and labelled and well packed with straw, and a pailfull of water thrown over them to keep their roots moist, they should be removed to where they are to be planted as soon as possible. After putting a layer of the surface soil in the bottom of the hole plant the Tree with the best soil, treading it in as firm as the surrounding earth, but leaving the surface loose and the Tree planted about two inches deeper than it stood in the Nursey-bed, as the earth will settle a little. After the Trees are planted they require a little attention to ensure success, and about the beginning of June when the ground gets warm, take some coarse barn-yard manure and litter the ground round the Trees to the distance of two or three feet, and if the summer is very dry and hot, water the ground three or four times round the Trees, and if they are not attacked by the *borer* they are almost certain to grow. The Trees ought to be pruned the following year, and there should be four principal limbs left to form the head, so situated as to balance the Tree equally, and I would prefer leaving three limbs sooner than five, although some persons who should know better, say that standard Trees ought not to be pruned. There is also a great diversity of opinion as to the proper time to prune Apple Trees and I have seen them pruned all the different months in the year, and each month has its advocates for pruning at that particular time. I generally prune in April, before the wood and buds get soft, and if small branches are cut off at that season, they grow over or nearly so the following summer, and if the Proprietor of the Orchard prunes his Trees regularly, he will seldom have to remove a large limb; if the pruning is done in June a favorite month with some people, the branches that are left to form the head of the Tree must be injured by removing those that are cut off at a time when the bark and wood are soft, and the young fruit forming. I would recommend the land to be kept under good cultivation until the Trees grow a good size, then when they begin to bear fruit the specimens will be much better than if grown on small stunted Trees. I suppose I need not remark that the orchard should be well fenced,

so as to prevent horses, cattle, and sheep from browsing on the young Apple Trees, which I am sorry to say is sometimes the case. But instead of this browsing trim your Trees neatly, once a year cut off all straggling unsightly branches, all diseased limbs large or small, and where two limbs interfere remove one of them, remembering to wash the Trees with soft soap in May. Any person of a little taste, by paying attention to their own orchard, and by looking into those orchards that are well kept, will soon acquire tact enough to manage their own fruit Trees.

The advantage of raising orchard Fruit is not the only advantage to be derived from planting an orchard, as I believe there is a large quantity of stony gravelly land that would be better if planted with Apple Trees, than if the land were left bare and exposed to the scorching rays of the sun. Last spring in pruning my Apple Trees, I cut several shoots out of the tops of the Trees of over three ft. long, and one of over four ft, although the previous summer was the driest season I ever saw in Canada, and the Trees that produced those shoots grew on the highest, most gravelly and strongest land on my farm.

If Fruit Trees improve the land, which I believe they do in some situations, it certainly must be an advantage to raise orchard fruit.

If we look at it in a lucrative point of view, it seems surprising, with such a soil and such a climate as we are possessed of, that good Winter Apples are now worth $2½ to $3 per barrel: and we in this neighbourhood by a little exertion and trifling expense might have in a very few years, the $2½ or $3 coming in instead of going out. There is scarcely and individual but likes to see good fruit and if they cannot eat it, still they like to see it grow; and although banished from the lawn there are few Trees more ornamental than the Fruit Tree in full bloom, in its white and pink dress or when loaded to breaking with its rich, mellow, delicious fruit, fit to tempt any urchin that sees them to a breach of the eighth commandment.

Fruit Trees are certainly an ornament to a farm and if we can raise a crop of roots, grain or grass, and a good crop of excellent fruit at the same time, which we can do,—it certainly must be admitted that it is an advantage to raise orchard fruit. Pear Trees seem to grow here as fast as the Apple Trees, but they do not seem to bear transplanting as well: but by taking a little pains—littering the ground round the Trees, and giving a few waterings during the dry weather, I think there is little fear but they will bear transplanting. Cherry Trees grow here, and generally grow too fast, and most people not content with their fast growing force them still more by manuring the soil, which causes them to grow an abundance of tender wood not solid enough to stand the severity of the winter I have seen some fair specimens of Cherries here, but they are like the Peaches—rather a rarity.—If they were planted along the fences where the grass would check their growth and not cultivate the soil round them, I believe it would be an advantage. Plums seem well adapted to the soil in this part of the country, and I have seen some very fine specimens of the fruit, but we want more variety which may easily be remedied, as there are several new kinds in the Guelph Nursery for sale.

As I have unwisely got into this discussion on orchard fruit, I see I must reveal my secret of raising Peaches, and to make a clean breast of it I will let you know how I manage to raise Peaches of over nine inches in circumference and about half a pound in weight. In the fall of 1847, I planted a few peach stones, a shoot from one of them came up very strong in the spring, and I budded it in the following August with a rare ripe Peach bud; when two years old I transplanted it to the south-east side of my house, and trained it to the stone wall; the soil is strong loam, and I dressed it in spring with unleached ashes. When it was five years old, it bore fruit of most delicious flavor, at least several said so that tasted it. In the very dry weather I litter the ground around it, and give it an occasional watering. I do not prune this Tree as I do my Apple Trees—I prune it three or four times through the summer, leaving the bottom of the scions three or four inches long, to bear fruit the next summer; when five years old this Peach Tree covered twenty feet in length of wall, and twelve feet in height, as I cut down that low. The frost does not seem to injure it and it has never been sheltered, excepting against one storm last spring, while in bloom. If we try, I am quite satisfied we can grow Peaches here, as they are grown by the 100 bushels within less than 30 miles of here.

Mr. President and Gentleman—I thank you for your attention while listening to these meagre remarks, and I shall feel a pleasure in hearing any gentleman present correct my errors.

At the conclusion of the address, the President warmly thanked Mr. C. for his able essay, with which, he said he heartily coincided.

In answsr to a question from Mr. Wright, Mr. Caulfield said he considered the early part of spring the best time for transplanting.

Mr. Wright referred to the damage done to fruit trees by the shoots which usually spring up about the roots, and enquired what was the best time to cut them off.

Mr. Caulfield said they might be cut off at any time; and when cut off should be covered with earth.

Mr. Wright had seen orchards destroyed by a small insect about the 16th of an inch in length, called the "wood louse," which lay close in to the bark of the trees without exhibiting any signs of life, but which was a great destroyer of trees.

Mr. Caulfield said they could be destroyed by the application of soft soap. Mr. C. then referred to the culture of peaches. He said a gentleman from Dundas had been at his (Mr. C.'s) house a short time ago, who told him that he had raised 300 bushels of peaches last season, which he had sold at $3 per bushel.

Mr. Harland said that as individuals they had thanked Mr. Caulfield for his essay, but he thought it deserved something more; he rose, therefore, to move a vote of thanks to that gentleman for his able address. There were a few remarks which he (Mr. H.) wished to make before he sat down. Mr. Caulfield had remarked that their orchard land should be in a good tilth, and he had been forcibly struck with a remark made

by Mr. Wright, viz., that the land should not only be in good tilth, but that it should also be well fenced. Mr. H. here made some humorous allusions to his own troubles with bad fences. He had found some difficulty in cultivating his orchard lands; when he ploughed close to the trees, the whippletrees knocked off the bark, if the ground was seeded down, the trees became stunted in their growth.—Latterly he had adopted a different plan—he had seeded down his orchard with grass, but had dug a space of three or four feet around each tree; he intended to turn in his sheep to graze; and in order to prevent the sheep and mice from doing any harm, he had surrounded each of the trees with a box. With regard to the address, Mr. C. had evidently proved himself a good *orchardist!*; he had *pruned* his essay of all technicalities, so that every one could understand it; and he (Mr. H.) begged to move him a vote of thanks.

Mr. Wright seconded the motion. With regard to the essay, he thought it would, if published, be of great service to many a one.—Every one who had travelled must have seen the evils spoken of; this was especially the case with regard to bad fences. Mr. Caulfield had remarked that his orchard comprised some of the strongest and hardest ground on his farm, and had found the ground benefitted by planting. He (Mr. W.) had no doubt that such ground would be improved by being planted with fruit trees; for it would certainly yield more if shaded than if exposed to the full heat of the sun. He had been rather more successful than Mr. Harland; he had no trouble with whippletrees, for in ploughing his orchard land, he used oxen which needed no whippletrees. After going as close to the trees as he could with the plough, he dug the remainder. With respect to mice, Mr. Harland had adopted the practice of boxing his trees. Now, he thought Mr. H., in so doing, had made a box *for* the mice, for he would have to make holes in the boxes to admit the air, and the mice would run up and get in. He had tried other methods himself, but he thought the only remedy for the mice was the *cats*. He would like to know whether Mr. Caulfield had observed the "wood louse" on his trees, and whether he had found the soft soap a sufficient remedy: or whether he knew any person who had found it to answer.

Mr. Caulfield replied that he knew several.

Mr. Harland said he would like to reply to what Mr. Wright had said about his (Mr. H.'s) boxing system. Now, they all knew mice would not exist where there was no grass, and by turning sheep into the orchard that would be effectually kept down.

Mr. Wright had seen trees killed by mice where there was no grass.

Mr. Caulfield said that in winter the mice would run under the snow. He had himself lost ninety trees by them. The only remedy he had found to answer was to plough the grass down well, for if the mice had nothing to eat they could not exist.

Mr. Kench had heard it remarked that trees were apt to be barked when ploughing orchard lands. This might be remedied by using a small plough lately invented, aad which might be obtained in Guelph, by the use of which they could plough close to the trees.

Mr. McCrea had not much experience; but he had lost trees by all the means mentioned. He had an orchard one year which he lost by the gates being left open. This orchard was on a piece of new land, and he found it did not answer well; he accordingly left it for several years longer, and then got it fenced, took out the stumps, dug the holes for the trees, and mixed a compost to put in, instead of putting in a few shovelfulls of the subsoil. He thought it of the greatest importance that they should plant the *natural* tree, which would produce fruit in two or three years; if the fruit did not suit, let them take scions from trees in their neighbourhood, the fruit of which suited them. He thought Mr. Harland's plan of boxing would not succeed. His own plan was to plough between the trees with a span of horses, as close as possible, then take one horse and plough across, the portion which the plough would not touch might be hoed. Grass, he thought, would not answer in an orchard—it would only harbor mice; and the only way to get rid of the mice was to starve them out.—He thought, therefore, the best plan was to keep the land in good cultivation. He had not much experience in growing peaches, but he thought the land in this part of the country too high for the purpose. The plum appeared to be a native of the country, the only fear being its over productiveness; but this might be checked by nipping off a few of the blossom buds. Pears he had not tried, for he had never met with any in this part of the country that were worth growing.

Some desultory conversation followed; after which the club adjourned, to meet again the last Friday in February, when the "Best and most efficient mode of underdraining," will be introduced by Mr. Thos. Kench.

LONDON.—FARMING IN CANADA WEST.

We find the following account of London and farming in Canada West in a late number of *Moore's Rural New Yorker*, a spirited agricultural and family newspaper, published in Rochester, New York. The opinions expressed will no doubt be read with interest by many in Canada.

This London of the New World is the county town of Middlesex County, C. W., and contains a population of 10,000—English, Scotch and Irish, with a strong sprinkling of the "universal Yankees." Its streets are wide and regular and cross each other at right angles, which, as the place is on a broad table land and very level, appear very finely. The public buildings are the Court House, Royal Exchange, Covent Garden Market, City Hall, and some excellent Hotels, the leading one—Robinson Hall—being kept by a Down Easter. Few cities can boast of a better City Hall or Market. The town has recently been lighted with gas, and only needs a supply of good water to render it a first class inland city. Mercantile business is extensive, supplying a large extent of country, back to Lake Huron. Previous to the completion of the Great Western Railway the whole commercial business was done at Port Stanley, on Lake Erie, distant about twenty-five miles. The building of the railway has been of much benefit, inducing increased trade, additional and better buildings, and enabling the traffic to be continued through the winter months, heretofore impossible. The enterprising citizens have in course of construction the London and Port Stanley Railway, which will enable them to reach the Lake to some twenty-five miles, and bring them in cheap communication with Buffalo, with which city they now trade largely.

It is not the city alone that deserves mention, for around it, on every side is spread out a farming country of great beauty and fertility. Wheat, both winter and spring, is grown to a large extent and with good success. Some of the samples are as fine as the best Genesee. Farmers here are not particular in growing only one kind of wheat in the field, but mix the white and red together, to their own disadvantage when seeking a market. Good winter wheat commands $1,50, spring $1,25, oats 37½ cents. Very little corn is seen, from which it may be inferred that little is grown except for home use. Here, as well as elsewhere in Canada, attention is given to breeding good cattle and sheep, and fine horses. The beef in market for the holidays is superior, and the fat mutton can hardly be excelled. The sheep most in favor are the middle-wooled, South Downs and Cotswolds, and their crosses, with the natives. Agriculture is still in its infancy, and many of the farms at the north are new and only partially cleared. The land toward Lake Huron is respresented as very fertile and rapidly settling. Toward Lake Erie it has been longer tilled and is of a very superior character.

In some respects the Canadian farmers are in advance of those in the States. Having come from England, where high and systematic farming has received more attention, they the more readily adopt improvements which promise good results. They are large growers of the different root crops, and find them of great value. They have plows modelled after the Scotch, with which they plow deep and well far better as a general thing, than New York plowmen. Sub-soil plowing is beginning to attract attention and will be found very beneficial, as much of the soil is stiffly tinctured with clay. Draining is also receiving much thought. A company has been incorporated for the purpose of making and putting down drains, upon a large scale. It is proposed to do this upon a farm, and allow the proprietor to pay for the improvements made in annual instalments, with interest, something in the manner of a mortgage or lease upon the property. The head-quarters of the company are at Hamilton, and it embraces many of the influential and wealthy men of Canada West.

Horticulture receives very general encouragement, and few are the farmers of note who cannot boast of good fruit, and, indeed, choice and rare flowers and shrubs. Nor are these things neglected among the small farmers. Many a one, on his humble farm far away toward Lake Huron, is familiar with the best apples, pears, plums, and other fruit, and not a few have obtained the best trees of the celebrated nurseries of Monroe county. From Buffalo, too, they have drawn a liberal supply. Few countries of equal extent give better promise of the future than Canada West. It is dotted over with flourishing villages, and is fast being interlaced by well constructed railways, which, when completed, will greatly enhance the measure of her prosperity. We purpose to know her better, and say more of the different parts of the province, at a future time.

THE FARMER'S HOME.

What signify all the improvements in agricultural processes, which are constantly urged upon the acceptance of farmers, if the farmer's *Home* is what it ought not to be?

Deep cultivation, draining, drawing, ditching mulching, composting, &c., are all important, as a means; but the proper end to be accomplished is not the multiplication of dollars and cents—not the laying up in store of "much goods;" but that most desirable of all earthly ultimates, a pleasant, attractive, happy *Home*.

The farmer's Home should not be so much his castle, as his sanctuary. Over its threshold, disorders and discontents should never be allowed to step. Harmony, order, love and peace, as well as plenty, should reign within the farmer's abode, making it a paradise, as little marred by gross and corrupting desires as may be; where the intellect, the taste, and the affections may seek and find their appropriate and full gratification. What desolation, nay, what wants abound within those walls, where merely animal desires are cloyed with material profusion, to the exclusion of that higher food of the spiritual nature, which is, in fact, the "bread of life!" There, the physical man may grow, and fatten, and rejoice in its ease, and its indolence, with a sort of porcine satisfaction; while the inner life, and manhood, the God-spark, famishes, and dies.

The fields are the places where the head, aided by the strong arm, should triumph in material achievements. In the true Home, the heart, aided by the head, should emulate the industry of the bee, in storing its treasures, and like the treasury of the bee, those of the *human* Home should be of honeyed sweetness.

Wealth may build palaces to shelter gilded misery. Poverty, by making a true home in an unpretending cottage, hallows itself, and shames the power of gold.

It is astonishing with what facility the cultivated spirit changes even material objects into high spiritual individualities. A tree, a shrub, a flower, nay, a stone, may have its history—a history, the recital of which shall palpitate the listener's heart with joy, or blur his eyes with tears of sadness. Inanimate objects, (only so perhaps, to our thinking,) may speak a language which the heart shall hear, and feel, and answer. Around the true home, sacred as were held the household duties of olden times, cluster these objects of man's asthetic nature. They make him better, happier and wiser; opening up to him even here, a manifold life, and enable him to read sermons in stones, and to behold good in everything.

Verily, we are sorry to say it, but so it is, verily, the farmer's *Home* needs improvement more than his plow-shares, his threshers, or his reapers. It needs *more* than improvement; it demands a new creation, fashioned on a plan of such beauty and harmony, that it may be a temple worthy to be tenanted by beings who have spirits as well as bodies. Then, what follows in the way of even unlimited improvement in modes of material production, for the farmer's *Home* will be what it *ought* to be.—*Ohio Farmer.*

PLAIN HINTS FROM A YOUNG FARMER.

Tis said—"a *word* to the wise is sufficient."

Always take one or more agricultural papers, for every number will give you information which will benefit you dollars.

Be admonished that a stitch in time saves nine, for the laying up one rail, or nailing one board may save the ninth repetition and unruly stock.

Colts must have a great deal of exercise.

Don't be afraid to plow deep. A *few* more oats in the spring, will make *many* more at harvest.

Early fruit trees should be protected from the frost by spreading straw around the roots, which will prevent the buds from starting.

Feed your fowls the year round if you would make them profitable.

Give your calves, which you intend to raise, a little fine hay; and as soon as possible turn out to grass.

Have a separate pen into which your pigs can go, and get shelled corn and milk.

Innovations upon old precedents should be rare.

Judge not hastily, but examine well before you decide.

Keep clear of Shanghais.

Lime should be accessible to poultry.

Make the most of everything.

Never half do anything, you may thus lose more in one day than a month can restore.

Often inspect your stock and keep a sharp look out for disease and accidents.

Pure water should be applied to everything.

Quality not quantity should be the maxim.

Read in your spare moments, rather than gossip.

Salt in small quantities should be fed at regular intervals to your stock.

Turkeys, like turncoats, are a poor dependence.

Upon industry and economy does the success of life depend.

Very great care should be taken with your fruit trees: cultivation is necessary and will repay an hundred fold.

Watch carefully the clouds and the crows that you may not be caught unawares.

Xerxes boasted as a god. Remember thou, it is "God only that giveth the increase."

You can raise fine calves upon sour milk or whey after they are a few weeks old; when young they never should be fed on cold drink.

Zeno excelled in philosophy. Strive that you may excel in agriculture. L. C. *Charlton, N. Y.*

AGRICULTURE IN COMMON SCHOOLS.

The Legislature of VERMONT, at its recent session, passed the following :—

AN ACT to encourage the study of the science of Agriculture in Common Schools.

It is hereby enacted, &c.

SECTION 1. The Governor is hereby authorized to purchase one copy of "Waring's Elements of Agriculture" for each town in the State, and to draw an order on the Treasurer for the payment of the same

SEC. 2. One of these books shall be placed in the hands of the Superintendent of Schools of each town, with instructions to examine it with regard to its merits as a school book, and [he] shall report to the Clerk of the said town what number of copies, if any, is required for the use of the Common Schools of the said town.

SEC. 3. The legal voters of each town shall, at the next annual town meeting, vote whether or not the town shall purchase the number of books recommended by the Superintendent aforesaid, and the Town-Clerk shall report to the Governor of the State the result of such ballot.

SEC. 4. The Governor shall then order to be manufactured, in such style as he shall deem expedient a sufficient number of the books to supply the demand by the aforesaid ballot, and these books shall be manufactured in the State of Vermont, and they shall be deposited with the Superintendents of Schools in the various towns, and the payment therefor collected by the publishers or proprietors at their own expense.

Approved Nov. 13, 1854.

We have had some apprehensions for Vermont since we heard that gold had been discovered in her mountains, but this act allays them. Let her youth be well grounded in the science which forms the base of practical Agriculture, and the discovery of mines of yellow ore in her soil even as vast and rich as those of California could not suffice to ruin her.

We have so often commended the study of Agricultural Science in Common Schools that we have little now to urge. The idea of using some cheap elementary work like Waring's as a reading book is perhaps the most feasible of any.—Nothing can be more absurd than dragging boys and girls of eight to sixteen years through such essays as make up the bulk of the English Reader and most other first-class reading-books used in the common schools of our boyhood. The great majority do not really comprehend them, and are little more profited by their perusal than of they were printed in Greek or Latin. But put into their hands reading books that tell them of what elements soils are composed, how those elements with others floating in the atmosphere are recombined in plants, how these again reappear in animal structures, and how trees absorb mainly through their leaves the carbon and water which form so large a proportion of their trunks and limbs, and they cannot fail to be deeply interested as well as instructed. Now they will read to learn, and will be better fitted for intelligent and efficient husbandry at the close of each term. They will leave the Common school better fitted for improving the half-exhausted lands they are destined to cultivate than are the graduates of colleges under the old system.

We do not know whether the town elections referred to in the act above cited have or have not taken place, but it is not difficult to guess that in most cases nothing will be done. But we think there will be some towns in which the farmers will know enough of the importance of Science in Agriculture to be willing to learn more; and if there be but ten such in the State, the soil of those towns will be more productive and more valuable ten years hence than that of those towns which treat Agriculture as a mere drudgery to be endured and not as an art to be studied and acquired. And those towns which begin with placing a work on the elements of Agriculture in their Schools will not stop there but will soon proceed to supply those seminaries with such practical treatises as 'Devoe's Muck Manual,' 'Harrison on Insects Injurious to Vegetation,' &c., until their youth shall be thoroughly grounded in the knowledge which shall form the base of their future thrift and usefulness. Let

Vermont but lead the way, even doubtfully and timidly, in this career, and her sister States will ultimately acknowledge a debt to her for teaching truths of more practieal utility to them than would be the Annexation of the whole Continent.—*New York Tribune.*

MAPLE SUGAR.

The season for making maple sugar will soon arrive, and a few remarks as to fixtures and preparations threfor may not come amiss. A few years since it could be purchased in our market at from six to eight cents per pound by the quantity; but within the past two years it meets with a ready sale at ten and twelve cents per pound and choice samples will readily command extra prices. From being an article of slow sale, it has, in consequence of the clearing up of our lands, become an article of luxury; and we do not, under ordinary circumstances, anticipate any future decline in prices.

The quantity, color and taste are materially influenced by the care taken in the various stages of its manufacture, the cleanliness observed in the gathering of the sap, and its evaporation to the graining point. By reason of the high temperature required in the last stages of evaporation unless great care be taken it is very apt to be burnt and acquires a bitter empyreumatic flavor, very different from its own peculiar aroma and taste.

To gather the sap in buckets from fifty or one hundred trees, and carry it by manual labor to the kettles, we know from experience is rather hard work, and we much prefer having previously broken out good roads, to let the conveyance be done in a barrel on a sled drawn by horses or oxen, than carry it ourselves. Much lifting may oftentimes be saved, if the place of manufacture be so much elevated on one side that the sap will run from the barrel or hogshead into the boilers in a steady stream by simply turning a faucet near the lower part of the cask used for its conveyance.

It has also been ascertained by careful experiments that the flow of sap depends more upon the depth of the incision that upon its external size—also that an aperture half an inch in diameter is almost equally as effective as one of double its size; but in the one case the wound readily heals over by the growth of the same season—in the other, the growth of several seasons will hardly close the wound, endangering the vigor and health of the tree.

The experiment to which we refer was made under the direction of the Agricultural Club of Brattleboro,' Vt., and is in substance as follows: "In the spring of 1850, a committee consisting of three persons, was appointed to ascertain by actual experiment the proper size and depth of the bore in tapping the sugar maple. They accordingly proceeded to test this question in the most thorough manner, using all sizes of bits, from half an inch to an inch and a half in diameter—each making his experiment independently of the other—and the result of all was, that no difference could be perceived—the half inch giving as much sap as any other. Each one also tapped several trees, setting two buckets to a tree, with a single spile to each, but bored to different depths, from one to three and a half inches, and the results in this case were in every instance, when the weather was sufficiently warm to thaw the tree through, that the flow of sap was in porportion to the depth of bore; and to make the matter more certain, on deepening the shallow bores subsequently, they immediately overtook the others in quantity.

These experiments were repeated in 1851 by a different committee, with the same general results."

The sap of the sugar maple and a few other trees only, yields sugar when taken from the tree before the expansion of the buds and blossoms from their dorment state;—what precise change is induced by the expansion of the buds, whether of cause and effect, we know not. We also know that clear bright days alternating with frosty nights give the greatest flow of sap; and that if mild weather ensues and continues for any length of time, we can only obtain an uncrystalizable syrup as the product.

Supposing your buckets are all in order and readiness—troughs made by the axe we would only use as a last resort, simply because they become such convenient receptacles of dead leaves, &c.—take your spiles or tubes of suitable diameter, with a hole through them of one-quarter of an inch in diameter, with an auger, bore about three inches into the body of the tree let the tube enter the tree only so far as will be necessary to ensure its permanent attachment; attach your bucket to a nail or peg driven into the body of the tree a little above the spout, and you may feel secure that a casual thaw will not perhaps upset your trough and spill the sap.

Below we give an account of the process adopted by Mr. Woodward, who obtained the premium from the State Agricultural Society, in 1846 for the best article of maple sugar. The statement says:

"In the first place, I make my buckets, tubs and kettles all perfectly clean. I boil the sap in a potash kettle, in such a manner that the edge of the kettle is defended all around from the fire. This is continued through the day, taking care not to have anything in the kettle that will give color to the sap, and to keep it well skimmed.—At night I leave fire enough under the kettle to boil the sap nearly or quite to syrup by the next morning. I then take it out of the kettle and strain it through a flannel cloth into a tub, if it is sweet enough; if not, I put it in a caldron kettle, which I have hung on a pole in such a manner that I can swing it on and off the fire at pleasure, and finish boiling, then strain into the tub, and let it stand till the next morning. I then take this and the syrup in the kettle, and put it altogether in the caldron, and sugar it off. To clarify 100 lbs, of sugar, I use the whites of five or six eggs, well beaten, about one quart of new milk, and a spoonful of saleratus, all well mixed with syrup before it is scalding hot. I keep a moderate fire directly under the caldron until the scum is all raised: then skim it off clean taking care not to let it boil so as to rise in the kettle before I have done skimming it; when it is sugared off, leaving it so damp that it will drain a little. I let it remain in the kettle until it is well granulated; I then put it into boxes made smallest at the bottom, that will hold from fifty to seventy pounds, having a thin piece of board fitted in two or three inches above the bottom, which is bored full of small holes to let the molasses drain through, which I keep drawn off by a tap through the bottom. I put on the top of the sugar in the box, two or three thickness of clean, damp cloth, and over that a board well fitted in, so as to exclude the air from the sugar. After it has nearly done draining, I dissolve it, and sugar it off again, going through the same process in clarifying and draining as before."—*Gen. Farmer.*

MODES OF PLOUGHING.

Mr. Levi Durand, of Cerby, Ct., makes some useful remarks on ploughing, in the *Country Gentleman*. The advantage of what he calls the "gee about" system are very considerable on some land. By the other mode of turning,—that is, turning to the left instead of to the right,—the team treads on the ploughed land, unless headlands are left to be ploughed after the body of the lot is finished. By turnning to the right, the ends may be ploughed as the work goes on, saving the time lost in crossing the lands, and leaving the soil light and pliable, a matter of great importance in soils liable to pack closely. Mr. Durand gives the necessary directions, as follows:

"A still better plan we think would be to commence in the middle of the field; this could easily be found by pacing and staking. Here plough a furrow, say two rods in length, then turn back another furrow the same length. After you have ploughed six or eight furrows this way, you could commence ploughing across the ends of the land. Ploughing in this way, you would of course turn your team to the right, a 'gee about,' and so on until the field was finished.—The particular advantage of ploughing in this way is, that your team is all the time treading on the sward or unploughed land, while ploughing the other way or 'haw about,' you are constantly driving your team on at the ends on to the ploughed ground. If you have 'double team,' as is often the case in ploughing a heavy sward, then the ploughed ground at the ends of the land becomes trod very hard, and the soil is made almost as unfit for cultivation as though it had not been ploughed at all.

"Another advantage of the 'gee about' system of ploughing is, you can plough your whole field without leaving any middle or dead furrows, which is quite an object of consideration, especially in ploughing sward land. In ploughing mellow lands, the dead furrows are not of so much consequence, as they can be easily drawn down by the harrow in cross harrowing. The same system of ploughing without leaving dead furrows, can be done by using the side hill plough, by commencing at the side of the field, and ploughing forwards and backwards until the field is finished, leaving the headlands to be ploughed last.

RAISING CALVES—A NEW METHOD.

While on a short visit to the farm of M. Crowell, of this town, a few days ago, our attention was drawn to a plan of raising calves for early sale, which to us, in this section of the country, has the appearance of novelty, and and seems worthy of the consideration of stock growers.

Mr. Crowell took his calves (all heifers) last spring, and commenced feeding on sour milk to a few days old, keeping them on the same kind of food during the summer, taking good care to feed them uniformly, but not very abundantly, so as to keep them growing thickly without for

cing them too rapidly. In the fall they were put in the stables, and fed on hay, and a little meal, increasing the quantity of the latter gradually, with a view of fitting them for "beef" in the spring at one year old or a little under.

These ten calves look like young oxen, and are estimated to weigh about 300 lbs, each, alive. They will probably be sent to market soon, say next month, when we shall see how such beef will sell, and it will be relished by the lovers of good eating. For ourselves we should hardly find it in our hearts to decline a dinner from one of the best of them. We understand from Mr. C., who is making this trial by way of experiment, that he is quiet satisfied thus far with the present attempt to raise beef in one year, that he intends to renew the experiment another year, when he thinks some improvement can be made. *N. Y. Farmer.*

FARINACEOUS ALIMENT FROM STRAW.

The attention of agriculturists in France has been recently directed to the discovery of a method of converting straw into a kind of bran.—This discovery has been claimed by two individuals. The first is a miller near Dijon, of whose name we are not informed, who, it is said, on trying the mill-stone of a new mill, discovered the possibility of converting straw into a nourishing food. The second, M. Jos. Maitre, founder of the fine agricultural establishment of Vilotte, near Chatillon.

This distinguished agriculturist, known for the purity and perfection of his breeds of sheep, conceived the idea of converting into farina, not only the straw of wheat, and other grains, but of hay, trefoil, lucern, sanfoin, &c. His efforts are said to have been perfectly successful, and his discovery arrived at—not by chance, but by long experiment and research. The aliment which he has produced is said to be a complete substitute for bran. It is given to sheep and lambs, who consume it with avidity, and may be given to all other grammivorous animals, as a grateful and substantial food.

M. Maitre, with the view of bringing the process to perfection, has ordered a mill for its manufacture, and he is preparing to communicate a report to the Royal Society of Agriculture on the advantages in rural domestic economy to be derived from this preparation. We are not at the present moment informed of the nature of this process. If it be a simple grinding of the straw or fodder, and a separation of some of its fibrous matter, we can easily imagine the advantages that may result from it. We know in this country that the mere chopping of straw adds greatly to its powers, by facilitating mastication and digestion. We may believe that a more perfect communication of its parts will produce a corresponding effect, and extend very widely, the use of straw and other fodder, as a means of feeding our domestic animals.—*Quarterly Journal of Agriculture.*

THE MANURIAL USES OF LIME.

The *Mark Lane Express*, an English Agricultural journal of marked ability, has an article in a recent number "On the Uses and Application of Lime to Soils," which, but for its length, we would copy entire for our readers.—Its substantial points may be condensed as follows:

1. Lime acts very powerfully in its caustic state *in decomposing animal and vegetable matter in the soil.* It retains a portion of its causticity in contact with the moist earth, and even when moderately diluted with water, and Prof. Way thinks the best mode of applying lime would be to have it equally distributed over the soil *in solution in water.*

2. Lime acts surprisingly as a *stimulant* upon the *dormant powers of the soil* and the *inert manures* abiding therein. Liebig says, "Lime, in combining with the elements of clay, liquifies it, and what is more remarkable, liberates the greater part of its alkalies. The ceralia required the alkalies and the alkaline silicates, which the action of lime renders fit for assimilation by the plants. Ammonia and the phosphates are also indispensable, and with these we have all the conditions necessary to fertility."

3. Lime *neutralizes injurious acids in the soil.* Soils subject to flooding or stagnant water are said to be *sour*, as containing too much vegetable acid. Lime qualifies the vegetable and other soluble substances, and occasions their conversion by atmospheric action into food for plants. In this way it is useful in decomposing muck, and preparing it for a fertillizing application to loamy and sandy soils.

4. Lime is a powerful *alterative of the nature and texture of the soil.* By causing fermentation therein, its minute particles insinuate into

every crevice of the soil, causing its disintegration and separation, and the more rapid decay of vegetable matter, which eventually makes it mellow and pliable. Lime has power to decompose the mineral portions in various soils, and is thus the source of benefit by providing the constituents of magnesia, potash, and soda, so important to vegetation.

5. Lime applied in sufficient quantity *destroys worms, slugs, beetles,* &c., including most of the insects injurious to vegetation, which have for a portion of their existence a home in the soil.

Finally,—The free use of lime as an application to the soil "enriches the father but beggars the son." It is the cause of a vastly increased produce; *it is not in itself a manure,* but its power and action upon the soil extracts the very "soul of vegetation," converting not only manures but the ingredients of the soil itself into living vegetables.

FARM ECONOMY.

Economy, properly practiced, is one of the cardinal virtues. But true economy does not always consist in mere saving and stinting—it requires wide and far-reaching views, and a generous and self-reliant spirit, to decide practical questions upon that just basis which secures the greatest measure of success. Thus there is an economy of the farm which only the judicious and thoughtful take into account, and which the wisest cannot claim fully to comprehend. From the nature of his calling, and the wide and ever-varing range of influences acting upon it, the best instructed must necessarily remain in the dark upon many subjects which derange his plans and interfere with his success.

It cannot be denied, however, that light and knowledge with an important bearing upon the true Economy of Agriculture, still remains very generally unused and unheeded. Let us point out, briefly, some of the beacons kindled on the route of Progress—some of the truths established by the researches of Improvement.

True Economy works thoroughly and faithfully. It does not require a large area of land o exert itself upon ; it glories in raising ninety bushels of corn upon a single acre rather than thirty—upon forty bushels of wheat rather than ten. It gives *much labor*—all the labor required to do the work in the best manner—*upon little land.* It leaves no fertile farm six inches below its own, all untilled and uncared for; but remembering that its title-deed covers unlimited depth, however circumscribed it may be upon the surface, uses the soil as far down as the plants care to send their roots after supplies of that fertility which results in an abundant yield. It thus saves in the cost of the land, in fencing taxes, &c., and something in the labor of cultivation, and still produces more real profit than the contrary course. It is better to economise in land than in labour—and many a farmer, if he would sell half his land, and put his whole force and capital into the cultivation of the remainder would make money much faster than he now does.

True Economy does not expect to reap without sowing. Hence manure, to keep up and add to the productive power of the soil, is constantly supplied, and thoughtful care on this subject is ever characteristic of the farmer who succeeds. Read the reports of premium farms, of large crops, of profitable experiments in agriculture, and this ever seems the key and the explanation of their results. A judicious expenditure in the collection and preservation of manure, is always a paying investment. And there are a thousand sources of fertility now neglected which it is the province of true economy to discover and secure. We must feed, if we would take from the soil, and the more generous the husbandman the greater his reward.

True Economy does not stop with a mere glance at first cost. In farm stock, for instance, it costs little more to raise, to any given age, a good animal than a bad one, while one may be ten times as profitable as the other. The good may cost more at first, but they are sure to prove valuable—while the cheap are almost certain to be poor and dull of sale. The best breeds of animals—the best grains—the best varieties of fruit—all these are sought for by the truly economical cultivator of the soil. The subject is a very suggestive one—but the reader can take it up for himself, and follow it out practically in his own operations. We venture to assure him that it will not be a losing business, even under any seeming failure, if it incites him to a more extended and thorough study of the subject.—*New Yorker.*

The three great motive powers employed in all mechanical operations are water, wind and steam, the latter taking the lead of both the others at the present time.

Horticulture.

CATALOGUE OF VALUABLE FRUITS.

We noticed in our last the receipt of the proceedings of a convention of the American Pomological Society at Boston, which was attended by most of the distinguished Horticulturists, Orchardists, and nursery men of the Eastern and Northern States. Among other valuable information we find a catalogue of fruits adopted by the Society as being the best varieties now grown. The list will be useful to those who are about to purchase. Some of these fruits will no doubt be found less valuable in Canada, than in a more genial climate. But the difference between that portion of Canada, west of Toronto, and the states in which these fruits flourish is not very great. The purchaser should be careful to deal with nurserymen of established reputation.

APPLES.—*For General Cultivation.*—American Summer Pearmain, Baldwin, Bullock's Pippin, Danver's Winter Sweet, Early Harvest, Early Strawberry, Fall Pippin, Fameuse, Gravenstein, Hubbardston Nonesuch, Lady Apple, Ladies' Sweet, Large Yellow Bough, Melon, Minister, Porter, Red Astrachan, Rhode Island Greening, Roxbury Russet, Summer Rose, Swaar, Vandervere, White Seek-no-Further, William's Favorite (except for light soils,) Wine Apple, or Hays, Winesap.

New Varieties which promise well.—Autumn Bough, Benoni, Coggswell, Genesse Chief, Hawley, Jeffries, Ladies' Winter Sweet, Monmouth Pippin, Mother, Primate, Smoke House, Winthrop Greening, or Lincoln Pippin.

PEARS.—*For General Cultivation.*—Ananas d'Ete, Andrews, Lawrence, Louise Bonne de Jersey, Belle Lucrative, or Fondante d'Automne, Beutre d'Anjou, Beurre d'Aremberg, Benurre Diel, Beurre Bosc, Bloodgood, Buffum, Dearborn's Seeding, Doyenne d'Ete, Flemish Beauty, Fulton, Golden Beurre of Bilboa, Madeleine, Manning's Elizabeth, Paradise d'Automne, Rostiezer, Seckel, Tyson, Urbaniste, Uvedale's St. Germain (for baking), Vicar of Winkfield, William's Bon Chretien, or Bartlett, Winter Nelis.

For Cultivation on Quince Stocks.—Belle Lucrative, Beurre d'Amalis, Beurre d'Anjou, Benrre d'Aremberg, Beurree Diel, Catillace, Duchesse, d'Angouleme, Easter Beurre, Figue d'Alengon, Glout Morceau, Mong Green of Cox, Louise Bonne de Jersey, Napoleon, Nouveau Poiteau, Rostiezer, Beurre Langlier, Soldat Laboreur, St. Michael Archange, Triomphe de Jodoigne, Urbaniste, Uvedale's St. Germain, or Belle Angevine (for baking), Vicar of Winkfield White Doyenne.

New varieties which promise well.—Clarigeau, Beurre Sterkman, Beurre Superfine, Rran le's St. Germain, Brandywine, Chancellor, Charles Van Hoogten, Collins, Compte de Flanders, Doyenne Bussock, Doyenne Goubault, Duchesse d'Orleans, Beurre St. Nicholas, Duchesse de Berri, Epine Dumas, Fondante de Malines, Fondante de Noel, Howell Jalousie de Fontenay Vendee, Kingsessing, Kirtland, Limon, Lodge, (of Penn), Nouveau Poiteau, Onondaga, Ott, Pius IX., Pratt, Rousselette d'Esperin, Sheldon, St. Michael Archange, Steven's Genesee, Striped Madelein, Theodore Vans Mons, Von Assene, (Van Assche,) Walker, Zepherin Gregoire.

PLUMS.—*For General Cultivation.*—Bleecker's Gage, Coe's Golden Drop, Frost Gage, Green Gage, Jefferson, Lawrence's Favorite, McLaughlin, Purple Gage, Purple Favorite, Reine Claude de Bavay, Smith's Orleans Washington.

New Varieties which promise well.—Ive's Washington Seeding, Munrre Egg, Prince's Yellow Gage, River's Favorite, St. Martin's Quetche.

CHERRIES.—*For General Cultivation.*—Belle Magnifique, Black Eagle, Black Tartarian, Downer's Late, Downton, Elton, Early Richmond (for cooking,) Groffon (or Bigarreau,) Knight's Early Black, May Duke.

New Varieties which promise well.—American Amber, Belle d'Orleans, Bigarreau Monstreuse de Bavay, Black Hawk, Coe's Transparent, Early Purple Guigne, Governor Wood, Great Bigarreau of Downing, Hovey, Kirtland's Mary, Ohio Beauty Reine Hortence, Walsh's Seedling.

APRICOTS.—*For General Cultivation.*—Breda, Large Early, Moorpark.

NECTARINES.—*For General Cultivation.*—Downton, Early Violet, Elruge.

PEACHES.—*For General Cultivation.*—Bergen's Yellow, Cooledge's Favorite, Crawford's Late, Early York, *serrated*, Early York, *large*, George IV., Grosse Mignonne, Morris White, Old Mixon Free.

GRAPES (under glass).—*For General Cultivation.*—Black Humburg, Black Frontigan, Black Prince, Chasselns de Fontainebleau, Grizzley Frontignan, White Frontignan, White Muscat of Alexandria.

Open Culture.—*For General Cultivation.*—Catawba, Dianna, Isabella.

New variety which promises well.—Concord.

RASPBERRIES.—*For General Cultivation.*—Fastolf, Franconia, Knevet's Giant, Red Antwerp, Rellew Antwerp.

New Varieties which promise well.—French, Orange, Walker.

STRAWBERRIES.—*For General Cultivation.*—Boston Pine, Hovey's Seedling, Large Early Scarlet.

New Variety which promises well.—Walker's Seedling.

CURRANTS.—*For General Culivation.*—Black Naples, May's Victoria, Red Dutch, White Dutch, White Grape.

GOOSEBERRIES AND THEIR CULTURE.

As a class, the small fruits, such as gooseberries, currants, strawberries, raspberries, &c., receive but a moiety of the attention which they merit. They all ripen at a season of the year when other fruit are scarce, and fill an important place in the luxury of a well furnished table.—True, almost every one has currants, small, acid things, the product of stunted and neglected bushes, and sometimes you will find a wild gooseberry bush transplanted into some fence corner, where, choked by grass and weeds, its fruit is even poorer than when in its wild state; or if the improved varieties are planted the want of care renders them unproductive, or they are destroyed by mildew, and hence many persons have come to the conclusion that they are not worthy of cultivation. But give them a good location and proper culture, and the sight of the bushes loaded with fine, large berries, would tempt the most unbelieving to give them a trial.

With good treatment none of the small fruits produce more abundantly than the gooseberry. It succeeds best in a deep, sandy loam with a northern aspect, but will thrive well in any soil provided it be made deep and rich. It should be trenched, or else worked two spades deep, and thoroughly enriched with any well rotted manure.

Many consider mulching absolutely necessary to prevent mildew, but that depends much more upon the situation and treatment than upon mulching. If they are fully exposed to the sun, as upon the south side of a fence, or in any soil with an unbroken southern aspect, nothing short of mulching, or *shading the ground around their roots* in some other way, will save them from mildew. But plant them on the north side of a board fence, hedge, or stone wall, two or three feet from it, work in a liberal supply of fine compost every spring, (if placed around them in autumn and turned under in the spring, so much the better,) and keep the surface mellow through the heat of summer, and there will be no trouble from mildew.

Like currants, they are easily propagated from cuttings and layers.—*R. N. Yorker.*

To Clean Brass.—Rub it over with a bit of flannel dipped in sweet oil; then rub it hard with finely powdered rotten stone, then rub it with a soft linen cloth, and polish with a bit of wash-leather.

PRUNING.

Pruning, properly speaking, is the judicious removal of encumbering and useless wood every year, so as to regulate the branches in every part of the tree, and thus give access to the sun and air to freely penetrate through the whole tree; this is necessary, for if the air and sun cannot get freely to the fruit and the leaves, they are imperfectly matured; the leaves cannot properly perform their functions, thus the sap is imperfectly elaborated, and both the wood and fruit are imperfectly ripened.

As to the time to prune, there is a diversity of opinions, whether it should be performed in the fall, after the leaves are off, or early in the spring before the buds break. This is immaterial; it is only a disagreement whether trees should be pruned at the beginning or end of their dormant state, but it amounts to nothing; pruning may be done any time during the dormant state of the tree; it should however, be performed before the sap begins to flow in the spring. In these remarks we allude to what is termed winter pruning—summer pruning is a different operation, of which we shall speak on a future occasion.

In pruning it is necessary to be well acquainted with the nature of the tree to be pruned; without this, it is impossible to prune to advantage. All trees are not alike in their nature; some produce their fruit on the young wood of the previous year's growth, others on spurs which grow from the old wood, and others on the young wood of the present year's growth; these points require attention by the operator, to enable him to perform the operation aright.

Apple, pear, plum and cherry trees bear principally on spurs which grow or arise out of the wood of two or three years' growth. These branches with spurs continue to bear for several years.

In pruning these trees, due regard should be paid to the production of these spur branches, by shortening the young wood on the main branches; the main branches should be regulated as to distance from each other, so as to give the tree a uniform appearance, and to keep it open for the admission of the sun and air.

Peaches, nectarines, and apricots, produce their fruit on the young wood of the previous years' growth; in pruning them, care will be necessary to retain the strongest and clearest

wood of the previous year's growth, cutting out the week shoots, and such as grow in a direction in which they are not needed, being careful to keep the tree open.

Vines bear on the young shoots of the same season. In pruning these, all weak shoots should be taken out, retaining only the strongest rods or canes; these should be shortened according to their strength; the object to be aimed at, is to retain only such a quantity of buds as will break strong. Care will be necessary so as not to retain more rods than the space occupied by the view will allow of, and placing them in such positions as will allow free circulation of the air, and freely admit the rays of the sun.

Gooseberry bushes bear on the young shoots of the previous season's growth. In pruning them cut out all cross shoots, retaining only the strong straight shoots of the previous year's growth: of these retain only the best and most ripened wood. Gooseberry bushes cannot be left too open; if you allow the branches to get crowded, you cannot expect fine fruit; air must be admitted freely among the branches to obtain good fruit. The black currant also bears on the young wood, and should be pruned in a similar manner to the gooseberry. The red and white currant produce their fruit on spurs of old wood; in pruning them, care will be necessary to form an open bush, with the bearing branches, which should be stopped to induce them to bear, and all the other young wood should be cut back to two or three eyes, being careful to keep the bush open.

In pruning, it is necessary to cut clean and smooth with a sharp knife, and all young shoots that come where they are not needed, should be cut clean out close to the main stem, so as to leave no eyes to fill the tree with useless wood.

In giving directions for pruning, it is impossible to give directions which branch should be taken out, and which left in; only the principles of the system can be given in writing; the relative position of the branches can only be determined by actual observation; the operator, if he understands the principles and nature of the tree, will be able to determine on this point.—The above remarks will give him the requisite information on the principles that should guide him in the operation.—*Exchange.*

Wash for the Hair.—Olive oil, half an ounce; oil rosemary, one drachm; strong hartshorn, two drachms; rose water, half a pint. Add the rose-water by degrees, otherwise it will not amalgamate.

THE WREN, vs. CHERRY BIRDS.

The common house wren, which is known to everybody on account of his lively song and his pugnacious habits, is found in all parts of the United States, and is an indefatigable destroyer of insects, "The immense numbers of insects (says Alex. Wilson,) which this little sociable bird removes from the garden and fruit trees, ought to endear him to every cultivator, even if he had nothing else to recommend him. But his notes, loud, sprightly, tremulous, and repeated every few seconds with great animation, are extremely agreeable." It feeds on insects and caterpillars, and while supplying the wants of its young, it destroys, on a moderate calculation, many hundreds a day, and greatly circumscribes the ravages of these vermin. The wrens are not confined to the country. They are to be heard on the tops of houses, in the central parts of our cities, singing with great energy. Scarcely a house or a cottage in the country is without at least a pair of them. It is said by a friend to this little bird, that the esculent vegetables of a whole garden might, perhaps, be preserved from the depredations of insects by a few pairs of these small birds.

The wren is often seen running over the fences and stone walls like a little squirrel, creeping in and out of holes and the crevices of wood-piles, hunting for various kinds of insects, particularly for spiders and moths, that lie concealed in these retreats. It is curious to observe the celerity with which he moves about on these hunting expeditions, running so unlike a bird that he is often mistaken for a mouse. The wren is very pugnacious, and will drive away other birds that intrude upon what he regards as his own premises. This trait in his character may be made to serve a useful purpose, rendering him guardian of our cherry trees during the ripening of their fruit, Place a wren box upon the cherry tree you wish to protect, in May, and it will seldom fail to be occupied by a pair of wrens.—These little birds, from that time regarding the cherry tree as their own property, will not only devour all the insects that infest its leaves and branches, but will also drive away every bird that alights upon the tree. When the fruit is ripe, no robin or any other bird that comes there to eat the cherries is allowed one moment's peace, and, by the pugnacity of the little pair who have built their nest upon the tree, the fruit is saved.—*Hovey's Magazine.*

Communications.

REPORT ON THE PRESENT STATE OF BRITISH AGRICULTURE,

BY WILLIAM HUTTON, ESQ.,
Secretary of the Board of Statistics, Quebec.

[Concluded from our last.]

Another great improvement which I saw, was on the Model Farm of the Royal Agricultural Society of Ireland, near Dublin. It consisted in having the out-houses, feeding-stalls, calf-pens, hog-pens, stables, &c. built round one yard common to them all. In the centre of this yard was a new large cistern, closely covered, into which drains from all the sheds and pens emptied themselves, thus giving a very large supply of urine from the stall-fed and other animals. This was drawn out in water-barrels, with perforated hose or tins, and allowed to fall on the plants, either turnips or mangold wurzel, or clover and grass, or grain, and was found to have as good an effect as a dressing of guano—the properties that the urine contains being as efficacious as those of guano, and not of dissimilar effect upon the crops. The sewerage of towns is also receiving a great deal of attention, as being likely to produce a manure equal to guano. Mr. J. T. Cooper, the analytical chemist, has reported upon it, and says that "plans for deoderizing and reducing sewerage to powder have hitherto failed, in consequence of the preservation of the ammonia not having been made a sufficient consideration." But a Mr. Stotherd has lately taken out a patent for deoderizing sewerage, by which the ammonia and other volatile principles are entirely fixed and placed in a condition most eligible for the food of plants. In this consists the superiority of the invention—"The liquid portion, separated entirely from the grosser matters, passes off from the precipitate in the form of water, as clear as crystal, and free from colour." Professor Way's experiments have long since proved that the filtration of liquid manure through clay land is quite practicable. It is fully expected that the prodigious amount of rich material in the sewerage of large towns will in a very short time be brought into universal practical use for the benefit of the world, instead of being allowed, as hitherto, to be a source of great inconvenience and annoyance.

Having visited some of the finest flax growing districts in the north of Ireland, it struck me very forcibly that the farmers of Canada might avail themselves of the immense profits which the proper cultivation of this crop gives to those who understand its culture and the processes required to render it marketable. That the soil and climate are adapted for its growth in both provinces, has been already ascertained by the breadth successfully cultivated for some years. In the Lower Province, the census of 1851 returns 1,189,018 lbs., as the produce of that year; and the linen manufactured from it, 929,249 yards. In the Upper Province, there are returned 59,680 lbs. of flax, and 14,711 yards of linen, quite sufficient to prove that neither soil nor climate are unsuitable for its cultivation. Taking this for granted, the next question is, How are we to get its cultivation extended, so as to make it an article of export? At present there is none grown except for home manufacture, and that is cleaned by the hand, by the families of the cultivators, at a great outlay of time and labor.

It is not probable that there are any private individuals who would enter so largely into its growth as to erect the necessary machinery on their own account solely. It will, therefore, require to be done by association of some kind, or the aid of some association. In Ireland and other countries, it has been thought wise policy to encourage its growth and cultivation by public aid, and, in the former country, a Royal Society has been formed and in operation now for a considerable time with that view. The best plan for promoting its growth is perhaps a difficult question in Canada, on account of the great distance and paucity of the parties who would be willing to undertake its cultivation for export, whilst as yet it continues, for that purpose at least, to be merely an experiment, and not ensuring a certain return of profit.

The present appears to be an excellent time for encouraging its growth in Canada as an article of export. In consequence of the war with Russia and the stoppage of flax from that country, the flax-mills in Scotland are going on short time, and the manufacturers having more orders than they can execute on account of this deficiency of supply, the Scotch farmers are taking measures for more extended cultivation of it, and the cautious Scotch farmer scarcely ever undertakes what is unprofitable.

The total annual import of flax from Russia, according to the last published return, was 1,226,258 cwt., about three-fourths of all the flax

imported from all other countries; and the average annual quantity of flax seed imported by Great Britain was 5,426,744 bushels, being more than five-sixths of the whole flax seed imported. "It is, however," says the *Economist*, "by no means improbable that some of these products of the Czar's empire will find access to our markets by a round-about road through other countries, though at an increased price to the British consumer, and this will be more apparent when we remember what devices were had recourse to in the French war, such as bringing silk from Italy round by Constantinople and all through Germany to England. That the price of the article will however be generally enhanced cannot be doubted." In fact, the price of flax is at this very time so high that I heard, when in Ireland lately, of many farmers who had netted £25, and even £30 sterling per acre—the price ranging from 50s. to 80s. sterling per cwt., (about 5½d. to 9d. sterling per lb.) There are very many late North of Ireland, Scotch and Dutch farmers now resident in Canada who perfectly understand its culture and preparation for market—the difficulty is the want of machinery. Whilst in the Province of Ulster lately, I visited some of the very best flax-mills, of the latest and simplest construction. There was one especially in Comber, County of Down, that worked most speedily and efficiently, preparing the flax for market through all its stages, after being rotted and dried. It was turned by a small water-power, and the entire cost of its erection, materials, machinery and everything, was under £200 sterling. Mr. Andrews, of Comber, Lord Londonderry's agent, told me that there would be no difficulty in procuring a mill-wright to go over to Canada to erect similar ones, perfect in every respect, by paying him £100 sterling for a year's work, and that they would not cost £200, exclusive of the water-power. The mill was of course not large, but there was a shed adjoining for storing the flax and putting it through the first process—viz., straightening for the scutcher. The great matter for Canada would be to have a machine constructed that we could attach to our horse-powers, so many of which are now owned by our farmers in the Upper Province, or to the wind-powers of the Lower Province; but the simplicity and cheapness of water-power flax-mills may induce their erection by two or three private individuals uniting together for that purpose. The Agricultural Association would promote the interests of Canada very much indeed by offering so handsome a premium as would induce some of our mechanics to construct machinery adapted to the wants of our country. The premium ought to be of such an amount as would induce persons of small capital to spend time and means to effect its construction.

The cultivation of flax would be useful to us as farmers, not only on account of the direct profit which the crop, properly managed, would produce, even at the present high rate of freight, but that it would also add another crop to our *rotation*, and relieve the land from the eternal wheat-cropping which sooner or later—conducted as it is in Canada—must prostrate the energies of our soil.

Even supposing that flax is quite as severe a crop upon the soil as wheat, yet the very *change* would be beneficial, and the seed well made use of at home would entirely remunerate the farmer for the loss of straw. Mr. Roche, M.P. for the County of Cork, had 2,500 acres of flax on his estate, which would yield 7,000 barrels of flax seed, (2½ bushels per barrel), i.e., seven bushels per acre, worth 6s. per bushel here, being 7s. 6d. sterling in England.

It is not uncommon now to sow clover seed along with the flax, and the pulling of the flax is very beneficial to the growing clover plant, by moulding it and admitting the air. I saw very beautiful clover cultivated in this way.

At a late meeting of the Royal Society for the promotion of the growth of flax the Chairman, Sharman Crawford, Esq., exhibited two specimens of the flax plant, each upwards of four feet long, and in every respect equal, one being grown from Riga seed, and the other from home-saved seed of the first year's saving. Both were sown on the same field the same day, and treated alike throughout, "in order," says Mr. C., "that the result should satisfy farmers as to the value of home-saved seed."

There is great discussion at present in the flax growing countries about the best system of retting (sometimes called rotting). Mr. McAdam, the Secretary of the Royal Society for the promotion of the growth of flax, showed me a great many varieties of samples retted by different processes. The best was that done in good running water, suitable for the purpose; and the prevailing opinion appeared to be, that if good water was to be had, and a knowledge of the process withal—the old-fashioned way, though the most tedious and protracted, produced the finest and best flax,

—supposing the fibre in all cases to be equally good. If well retted, 100 lbs. of flax straw will produce from 18 to 22 lbs. of flax, according to the quality of straw. In Canada there would be no want of good running water for the purpose, though in both Provinces it is the process of *dew-re'ting* which is adopted—that is, spreading out the flax thinly on the ground, and leaving it for a considerable time to be damped by the dew and rain, and have the influence of the weather, until the fibre separates freely from the stalk; the grass is allowed to grow up amongst it for a fortnight, and it is then turned and left for another fortnight. But flax is cultivated in Canada in small patches, and merely for home use. Were it cultivated for export, there is nothing to prevent the adoption of the proper system of retting. The machinery for preparing for market is what we very much require to encourage its cultivation. The expense of export would not be a great barrier to its growth, because a great weight and value for a large sum of money could be packed in a small compass, and even £2 10s. per ton, if it cost so much, would not be a very large item in £65, which is perhaps about the average price.

The subjects I have mentioned here appear to me to be those which were most prominently engaging the attention of the agricultural public in the old country—viz., the draining of land and the increased knowledge of its good effect; the forcing of cattle to early maturity, by the increased growth of succulent food and the use of linseed, &c.; the use of various descriptions of portable manures, and the means being taken to provide a supply of them; the adoption of novel methods for increasing the quantity of breadstuffs and of flesh-meat; and the extension of the growth of flax and flax-seeds, and improvements in the method of preparing both for market.

With regard to seed wheat, of which we require a change in Canada very much, that called Payne's Defiance seemed to be highly esteemed; the ears are very large, and it grows to a great height. It is this description which Mr. Mechi has chiefly on his farm at Tiptree, in Essex. On a late occasion, when he had 300 visitors to view his farm, some of them who went to explore a field of his (sown with this species) were at once "shut out of view by the waving and luxuriant mass of vegetation."

With regard to new implements of husbandry, their name is legion; but I did not see many worthy of very particular attention, or in any way better than those which we have ourselves.—Fowler's draining plough, worked by steam, and which drains land four feet with ease, if it be free from stone, is attracting a good deal of attention; but, in fact, the best reaping and mowing machines, and many other implements, were from this side of the water.

For the Agriculturist.

INORGANIC & PROXIMATE ORGANIC ANALYSIS OF PLANTS AND THEIR USES.

BY J. H. SALISBURY, M. D., NEW YORK.

Vegeto-chemical analysis are instituted for the purpose of ascertaining, either quantitatively or qualitatively the proximate and ultimate organic and inorganic constituents of the whole plant and its several parts. It is requisite, in studying the physiology of plants, that equal attention be paid to these three kinds of analysis, for there is a great distinction between the chemistry of inorganic and organic bodies; that, in the former case, the determination of the proximate principles can be inferred from that of the ultimate constituents, while, in the latter case, no such rule holds good. Hence, these methods of analysis must be conducted separately and distinctly. In the examination of any given plant, special attention should be directed to the per centage of inorganic matter, organic matter, and water, in the different proximate organs, as the root, stem, leaves, &c. separately and in the whole plant. This gives us not only the per centage of water, dry matter and inorganic matter in the whole plant, but also the per centage of these in the several organs individually.

To illustrate its practical bearing, suppose the plant in view is one commonly cultivated for food—for instance, maize. We determine in a fresh plant, when ripe, the aggregate amount of water, dry matter and inorganic matter which that plant contains. Suppose the average of each plant to be one pound, consequently one hundred plants would amount to one hundred pounds. These one hundred plants or one hundred pounds contain of water 15 lbs.; organic matter, 81 lbs.; inorganic matter, 4 lbs. Suppose one acre of land to produce six tons of plants, which is a fair yield, these six tons would contain, of water, 1,800 lbs.; organic matter, 9,710 lbs.; inorganic matter, 480 lbs. The per centage of inorganic matter interests us particularly in

this preliminary examination, because we know that the plants obtain it entirely from the soil.—There must be in the soil all the organic ingredients which we find in the plants, and the plants must derive all their inorganic matter which they contain from the soil. Hence, we must find in the acre of soil, after the crop is removed, 480 lbs. less of inorganic matter than it contained before the plants were grown upon it. If this acre be cropped with the same plant for a series of twenty years, without any organic matter being added, there will be removed 9,600 lbs. Hence, the soil will contain 9,600 lbs. less of inorganic matter than it did previous to the cropping; being an actual, though gradual, decrease of 480 lbs of inorganic matter annually. If we add, however, 480 lbs. annually to the soil, then it is plain it will not decrease, because we return yearly the amount taken away. But, in adding this inorganic matter, we may not furnish the precise ingredients to the soil which the plants have withdrawn, since we have not determined yet what these ingredients are. Our next step is, then, to determine accurately the composition of this inorganic matter. This will give us the amount of each ingredient removed. If we crop our soil for a series of years, and wish the cropping not to impoverish or exhaust its store of inorganic constituents, and consequently render it less productive, we must add yearly that which will furnish it with the amount of each ingredient removed. This can be done, by adding in a soluble form, so as to be taken up by the plant, the fertilizing materials which will restore the exhaustion suffered. It is not intended to convey the idea, that inorganic matter is more important to the growth of a plant than organic, or vice versa. The fact is, both are necessary, and may be considered equally important. The inorganic matter is derived entirely from the soil, whilst the organic matter, so far as is known, is derived both from the soil and air. Therefore, the reason why we add a given quantity of each of the ingredients of the inorganic bodies before referred to, to the soil annually, is, that they are the bodies, the aforesaid quantities of which are removed by a single crop: and we add them simply for the purpose of restoring what has been borrowed. Hence, the inorganic analysis of a plant is made to throw light upon the proper mode of its cultivation, whilst the proximate and ultimate organic analysis is not made so much for this purpose, as it is for arriving at its nutritive properties, and the bodies which it may contain, applicable to the arts and medicine, and to give us a better idea of its physiology. What has been said of maize, is merely to illustrate briefly the practical value of the analysis of plants in agriculture.

THE MONTHS--MARCH.

Sturdy March, with brows full sternly bent,
And armed strongly, rode upon a ram;
The same which over Hellespontus swam;
Yet in his hand a spade he also hent,
And in a bag all sorts of seeds ysame,
Which on the earth he strewed as he went.

SPENSER.

Among the ancients this month was regarded as the commencement of the year. The Romans called it MARCH, in honour of Mars, the God of War, who was considered the father of Romulus, their immortal founder. The natural characteristics of the month--fierce and blustering winds, with alternate storm and sunshine—are in these northern latitudes, at least, in striking accordance with its Roman designation. It was called by our Saxon ancestors *Klydmonath*, from *Klyd*, meaning 'stormy;' also *Lenct-monat*, or Lengthmonth, from the circumstance of the lengthening of the days at this period. After our ancestors had embraced Christianity it was usually known as the *Lenct-monat*, indicating the ancient practice of fasting—hence our modern term of *Lent*.

ST. DAVID'S DAY opens the month, commemorative of the Patron Saint of Wales, who flourished at an early period of the Christian era, and is said to have attained the extraordinary age of a hundred and forty years.

The ancient practice of wearing the Leek on this day has its origin and significancy involved in some obscurity. The probability, however, is that the custom was commemorative of some signal victory achieved by the ancient Britons over their numerous and powerful enemies.—Welshmen, we are informed, wore leeks as their chosen ensigns after the great fight of the Black Prince of Wales. Others suppose that the custom arose from the *Cymhortha*, which was somewhat analagous to our Canadian "*Bee*,"—a neighbourly way of rendering assistance to such farmers as, from sickness or other causes, were unable of themselves to perform the pressing operations of agriculture at their proper seasons. The practice has been thus described:—"At an appointed time they all met to assist a sick or

distressed neighbour in ploughing, or in whatever other agricultural service their help was needed; on which occasions they each brought with them a portion of leeks, to be used in making a general mess of pottage." As the onion was considered sacred by the Egyptians and the misletoe by the ancient Druids, so probably was the leek by the early inhabitants of Wales—the practice having at one time a mystic and religious significancy—the custom long surviving, as in numerous other cases, although its origin had been forgotten.

The festival of St. Patrick, the Patron Saint of Ireland, falls on the 17th, and is commemorated by the people of the Emerald Isle and their descendants in every part of the world. As is commonly the case in matters pertaining to ancient times, considerable obscurity envelopes the early history of this celebrated personage, who conferred such signal and lasting blessings on the land of his adoption. Pope Celestine consecrated him a Bishop under the ecclesiastical name of Patricius, and sent him over to Ireland to convert the wild natives to the Christian faith. Upon landing at Wicklow, in 433, he at once unfurled the banner of the cross; but so opposed were the rude natives to the new doctrine, regarding it as an insult to their traditional and heathenish faith, that the good Bishop, it is said, was near being stoned to death, when he plucked up a trefoil by the root and asked, "Is it not as feasible for the Father, Son and Holy Ghost to be one, as for these three leaves to grow upon a single stalk?" So convinced, we are told, were these untutored people of the truth of the sacred mysteries inculcated by St. Patrick, that they came over to the new faith in countless multitudes, and received at the Bishop's hands the rite of Christian baptism, and thus became partakers of the blessings and privileges of the Church.

Lady-Day, or the festival of the Annunciation, occurs on the 25th of this month, and is the only day that calls for particular remark here. This feast is held in remembrance of the announcement of the birth of the Saviour to the Virgin by an angel. Happening, as it does, near the time of the Vernal Equinox, one of the natural divisions of the year, it has been regarded as a reckoning point in matters of business, and hence denominated Quarter-Day. It is still a common practise in many of the rural districts of England for domestic and agricultural servants to be hired for a year, from one Lady-Day to another.

Speaking of domestic matters, it may be remarked, that very much of the farmer's success in his calling depends upon the qualifications of his help-mate, and the manner in which she conducts the household establishment. The duties of a housewife, in arranging and disposing of in-door matters, which legitimately come under her control, are numerous and pressing; and the way in which these things are managed materially affects the order and comfort of a household, as well as the profits of the farm.—Girls should be early accustomed to house-work; and every sensible woman will regard her home as the peculiar sphere of daily rule and action which Providence, by the very necessity of things, has assigned her. Hear what old Tusser says upon this point; quaint may be his remarks, but they are full of interest and meaning:—

"Of huswife, doth huswifery challenge that name;
Of huswifery, huswife doth likewise the same;
When husband and husbandry joineth with these,
There wealthiness gotten is holden with ease.

The name of a huswife, what is it to say?
The wife of the house, to the husband a stay:
If huswife doth that as belongeth to her,
If husband be witty, there needeth no stir.

The huswife is she that to labour doth fall,
The labour of her I do huswifery call;
If thrift by that labour be honestly got,
Then is it good huswifery, else it is not.

The woman the name of a huswife doth win
By keeping her house and of doings therein;
And she that with husband will quietly dwell,
Must think on this lesson, and follow it well!"

There is one duty in particular belonging to the farm-house that in most instances falls almost exclusively on females to perform, that of milking the cows and attending to the dairy. In these operations, order, punctuality and perfect cleanliness are essential to proper management and success. And what so likely to accomplish these objects as the personal superintendence of the mistress of the house? Males it may be necessary to employ occasionally as helpers, but the chief part of the duty of milking the cows and managing the dairy must necessarily devolve on the "housewife" and her maidens. Bloomfield,—the poet of nature and country life—referring to this subject, in his own native Suffolk, describes what he himself had been accustomed to take a part in, under the familiar appellation of Giles. After having driven the cows from their pasture to the homestead, for the purpose of being milked, he says—

"At home the yard affords a graceful scene!
For Spring makes e'en a miry cow-yard clean.
* * * * * *
Forth comes the maid, and like the morning smiles;
The mistress too, and followed close by Giles.
A friendly tripod forms their humble seat,
With pails bright scour'd and delicately sweet,
Where shadowing elms obstruct the morning ray,
Begins their work, begins the simple lay;
The full-charged udder yields its willing streams,
While Mary sings some lover's amorous dreams;
And crouching Giles, beneath a neighbouring tree,
Tugs o'er his pail and chants with equal glee;
Whose hat with tattered brim, of nap so bare,
From the cow's side purloins a coat of hair,
A mottled ensign of his harmless trade,
An unambitious peaceable cockade.
As unambitious, too, that cheerful aid
The mistress yields beside her rosy maid;
With joy she views the plenteous reeking store,
And bears a brimmer to the dairy door;
Her cows dismissed, the luscious mead to roam,
Till eve again recall them loaded home."

In the more moderate climate of the British Islands, March is to the farmer one of the busiest months of the year. It is not so, however, in this part of the world; winter still lingers, and although there are certain indications of spring, in the lenthening day and increasing warmth and sunshine consequent thereon, it is seldom that much progress can be made in the important work of preparing the soil for the reception of the seed. In England there is a very old proverb, "that a bushel of March dust is worth a king's ransom;" indicating the important influence which the character of this month exercises on the results of the agricultural year. A cool dry March is considered most favorable to the sowing and germination of the different kinds of seeds, for spring crops;—the strong, drying winds so characteristic of this season, by facilitating evaporation, exert a most beneficial influence on the soil. Hence a cold, wet spring, in these northern latitudes, is always more or less unfavourable to the succeeding harvest.

The sharp and boisterous winds which are felt in this and the succeeding month are admirably adapted to aid evaporation, and thus prepare the saturated soil for the purposes of the husbandman.

"——— These cruel seeming winds
Blow not in vain. For hence they keep repress'd
Those deepening clouds on clouds, surcharged with rain,
That o'er the west Atlantic hither borne,
In endless train would quench the summer blaze,
And cheerless, drown the crude unripened pear."
THOMPSON.

During the past month, particularly in the early part of it, we experienced a degree of cold seldom equalled in these regions. Frost, however, is a beneficial agent in nature, and is particularly serviceable to the farmer in loosening the soil, and bringing it into a favourable condition for the purpose of cultivation. The expansive force which water exercises while passing from a fluid into a solid state is well understood. It would be difficult to assign a limit to its force. Cannons filled with water, and plugged-up so as to leave it no room for expansion, have been burst by this invisible agent. By expanding the small amount of water contained in the fissure of rocks, it effects their disintegration, bringing down the grand fragments of the lofty mountain cliffs into the valley below; thus orginating and spreading abroad fruitful soils for the pasturing of cattle or the raising of grain. Similar effects are produced by freezing on the smaller fragments of disintegrated rock and organic matter, which unite to form the soil, from whence vegetable life derives a large portion of its sustenance. The soil being saturated with moisture during autumn and the commencement of winter, is heaved up, and pulverised by the alternate expansion and contraction of frost and thaw, so as admirably to fit and prepare it for the reanimation of the whole vegetable kingdom, on the return of spring.—This is indeed nature's ploughing; and one of the principal causes why the soil of Canada is, comparatively speaking, easily cultivated, is unquestionably to be traced to the valuable aid of frost. Hence it is found beneficial, especially on tenacious clays, to plough them roughly in the fall, so as to expose the largest amount of surface to atmospheric influences. Without this important action of alternate freezing and thawing, it would be next to impossible, by any appliances of art, to bring the heavier soils, which constitute a large portion of the earth's surface, under profitable culture.

Still, however, necessary and beneficial frost may be in pulverising the soil, it is occasionally injurious to young plants, when not protected by snow; especially to wheat in early spring; causing the roots to be uplifted by the alternate action of freezing and thawing. It is in most cases extremely difficult to correct this evil; the only practicable plan being to keep the surface close and smooth as possible, by mechanical pressure. It is fortunate that during the late severe weather the ground in most instances was covered by a thick carpet of snow, thereby preventing its heat radiating into the surrounding and much colder atmosphere. What a simple, yet effectual contrivance is this for protecting

tender plants from the otherwise destructive power of frost!

March is a month which demands the best attention of the farmer to his live stock. Provender often runs short, and cattle consequently suffer more at this time than during even the depth of winter. As the weather gets warmer, those farmers who are happily supplied with turnips, mangels, &c., will find in those excellent roots a source of nourishment to their cattle, which their less provident neighbours can little understand. Uncooked roots given in large quantities to stock in extreme cold weather are comparatively of little worth, and sometimes even positively injurious; but during this and the following month—being the most pinching time of the whole year—they are an invaluable auxiliary. Sheep, too, require special care—particularly where ewes lamb early, both the dam and the tender progeny demand all the attention which the promptings of prudence and humanity dictate. To a short gleam of warmth and sunshine it often happens,

"That frosts succeed, and winds impetuous rush,
And hailstones rattle through the budding bush,
Then, night-fallen lambs require the shepherd's care,
And gentle ewes that still their burden bear:
Beneath whose sides to-morrow's dawn may see
The milk-white strangers bow the trembling knee,
At whose first birth the powerful instinct 's seen,
That fills with champions the daisied green;
For sheep that stood aloof with fearful eye,
With stamping foot, now men and dogs defy,
And obstinately faithful to their young.
Guard their first steps to join the bleating throng."

BLOOMFIELD.

Such farmers as are favored with a "Sugar Bush" will eagerly embrace the first favorable opportunity afforded by warm days and frosty nights, of obtaining from the Monarch of the Canadian forest—the Sugar Maple—a plentiful supply of sugar for domestic use; and some good housewives may manage to dispose of a considerable quantity, after duly providing for their families—thus placing funds at their disposal for the increase of their domestic comforts. The success and profits of the farmer every where, more especially in newly settled districts, consist of the aggregate amount of a number of little savings. Strict and systematic attention to details, even the most insignificant, constitutes the success and soul of farming.

The thrifty farmer will now see to the repairing of his implements, and have every thing in readiness for the first opening of spring. Materials for fencing, prepared and hauled during winter, will now be completed, affording to the coming crops all necessary protection. As the thawing of the snow proceeds, every facility should be given to the exit of the swollen waters, especially in wheat fields, by removing all obstructions that may appear either in the furrows or natural channels of drainage. Winter is now fast closing, and the season of joy and hope—of green fields and flowers—the singing of birds, and the entire re-awakening of nature, are again about to delight the eye and fill the heart with emotions of gratitude and delight!

CANADA PREPARING FOR THE PARIS EXHIBITION.

Our readers are already aware that France has invited all the civilised nations of the world to forward contributions of their skill and industry to the great Exhibition that is to be opened in the metropolis of that country, in May next.

It was late last fall before our Provincial Government took any definite action for having the productions of Canada represented in Paris; and it will be found quite impracticable to make either so good or extensive a collection as might have been obtained if a longer time had been given for such a purpose. A central committee was formed in Montreal and Toronto, in connection with local committees in different parts of the Province, for the purpose of collecting specimens. But so far as Upper Canada is concerned, it was not till the commencement of the year that any definite steps could be taken by the central committee towards accomplishing the object. The Executive Committee in Quebec previously issued their instructions, copies of which were extensively circulated, and all parties who had gained honorary notices or premiums at the London or New York Exhibitions, or first prizes at the two last Provincial Shows, were specially invited to send contributions for the Paris Exhibition, on the encouraging condition that all their articles should be taken and paid for whether they were sent to Paris or not. The result of the appeal and offer, as far as Upper Canada is concerned, has proved any thing but satisfactory. Parties not having been successful competitors at previous Exhibitions were likewise invited to furnish contributions, and in case their articles should be accepted, they were, like the others, to be paid for at their full market value. All articles from the Upper Pro-

vince, were required to be sent to Toronto by the 10th of February, with a view of arranging the collection, and opening it for the inspection of the public on the 14th, and two following days.

This accordingly was done, and the articles were received and exhibited in the Hall of the Legislative Assembly. In consequence, however, of the extremely unfavourable state of the weather, preventing several contributions from coming in, the Exhibition was kept open to the 25th, and was visited by a considerable number of people. A deputation from Montreal, consisting of Henry Bulmer, Esq., Dr. Lichfield and Mr. Ricard, was sent by the Lower Canada Central Committee, to assist in the selection of the articles, and the Toronto Committee are much indebted to those gentlemen for their attention and assistance. It was resolved to reciprocrate the obligation, and three members of the Toronto Committee, viz. E. W. Thomson, Esq. Chairman; Mr. Sheriff Jarvis, and Mr. Armstrong, Esq., C. E. were appointed a deputation to attend the Lower Canada Exhibition at Montreal.

There were upwards of two hundred and fifty articles of all kinds, shown at Toronto; only about one hundred were considered by the judges as suitable for sending to Paris. It is proper however, to state that in consequence of the unfavourable state of the weather, and other causes, articles continued to arrive after the close of the show; and it was understood that anything really superior might have a chance of being sent, if it arrived before the collection was finally made up and sent off.

The agricultural department was by no means so full as we expected to find it—there were, it is true, several excellent specimens, but others were not above mediocrity. Mr. Fleming, seedsman, Toronto, had a rather extensive assortment of grain, grasses, &c., neatly put up in cases with a glass top; most of which was of superior quality. Captain Shaw, of Toronto, had two splendid specimens of Indian Corn, and a good sample of spring wheat, also some superior chicory. Mr. R. Wade, jr., Cobourg, sent some good specimens of different kinds of peas, an excellent sample of timothy seed, and four cans of excellent cheese. Mr. Platt, of Blenheim, had a barrel of very superior flour, which alone would speak well for Canada, at Paris Mr. Lawson, of Toronto had a very good barrel of flour; who, with Mr. John Nasmith, of this City, exhibited a variety of biscuits, which would do credit to any country. Mr. Commissioner Widder, sent a sample of the Canada Company's Prize wheat of 1853, which was a splendid specimen, quite superior to the Company's prize wheat of this year, of which there were several bushels exhibited. Indeed the grain generally of 1854, was, in consequence of the heat and dryness of the season, of inferior quality to that of the preceding year. It was expected that several superior samples of grain would be received before the collection was sent away.

Mr. Bingham, of Oxford, furnished an Iron Swing Plough, of excellent workmanship, and quite up to the latest mechanical improvements of the day. Another plough, partly of wood, equal perhaps in mechanical construction, and of very superior finish from Mr. Switzer, of Palermo. Also a well made plough from Mr. Morgan, of Markham. Messrs. Helm and Wade, of Port Hope, sent their newly patented Post-Hole Borer, an implement of great utility and power. Mr. Parsons also had a specimen of his Patent Brick Machine, which is said to possess very great merits. The Messrs. Edwards, of Toronto, exhibited a beautiful hunting saddle; and Mr. Thalkeld's collection of whips was of a superior description. Mr. Jones, of Gananoque, had very excellent specimens of spades and shovels. But the *article of the Exhibition*, was unquestionably the large case of Mechanics' Tools by Mr. Dale, of Galt. In whatever point of view that truly splendid collection may be considered, it will do credit to the maker and country that produced it, wherever it may go.—There was quite a large amount of cordage, string, halters, &c., of excellent finish and quality made by A. and D. McGregor, of Toronto, from flax grown by R. L. Denison, Esq., which obtained the *Canada Company's* liberal premium for that article in 1853. A centre table made by Mr. Bevis, of Hamilton, from several varieties of Canadian woods, elicited general admiration.—Several sections and planks of wood were shown, and we understand that it is the intention of both portions of the Province to make the collection of woods as complete as possible; an object most desirable and important.

There were a number of mechanical specimens, displaying both ingenuity and utility, as well as others in the department of Ladies' work and the Fine Arts, which we have not space to mention in detail. Miss Widder's fancy chair was exquisitely done. A large model of Brock's

Monument, now in course of erection, made of Queenston freestone, occupied a conspicuous position. Paul Kane, had four pictures, illustrating Indian life which elicited universal admiration. These pictures we understand were purchased by G. W. Allan, Esq., for the Paris Exhibition; thus adding another instance of the discriminating liberality of that gentlemen, who has been very active as secretary on this occasion. Mr. Armstrong's water coloured drawings of Canada scenery and ice-boating in Toronto Bay were much admired.

We have only glanced at those things which struck us as most deserving of mention; but we have no space to individualise others, perhaps, equally meritorious. The present instance pretty clearly proves that it is useless to expect a large assortment of articles on occasions like these, without offering premiums. It is to be hoped notwithstanding the disadvantages under which the collection was got up, that a sufficient number of articles of merit, will be found, in both sections of the Province, to give a fair and truthful exposition of the present state and future prospects of the industrial arts and resources of Canada, at the approaching World's Exhibition, in which the space alloted for their reception is necessarily limited.

ANALYSIS OF SOILS.

We publish in this number the first of a series of articles from the pen of Dr. Salisbury, of New York, late chemist to the New York State Agricultural Society, and of well established reputation in that department of science. We are glad to number Dr. Salisbury among our contributors, and from the plain, familiar style with which he treats his subject, we doubt not his papers will be interssting te most of our readers. Dr. Salisbury is connected with an agricultural and metallurgical laboratory in New York, recently established, which, from the reasonable charges for analysis, will probably be largely patronized by intelligent cultivators ot the soil. While we deny the extravagant claims put forward by some writers in behalf of chemistry, as applied to practical agriculture, we admit the great advantage that may frequently be derived by a careful and *accurate* analysis of the soil. No one but a working chemist is able to make an analysis that can be depended upon.

The following is an extract from the prospectus of the Laboratory under the management of Dr. Salisbury:—

The object of the Proprietors in establishing this Laboratory is to furnish those interested in Commercial, Agricultural, and Metallurgical pursuits an accessible, ready, and reliable means for obtaining analysis of Commercial Articles, Soils, Manures, Marl Peat, Limestone, Gypsum, Coal, Ores, and Minerals of every description, together with all other information connected with the application of Chemistry to Agriculture, Geology, Mining, Engineering, and the Arts generally.

Surveys and Reports of Mineral Property, and other business pertaining to Mining interests, will receive special attention.

CHARGES FOR ANALYSIS.

Quantitative Analysis of	Coal or Peat, -	$10
" "	Soil, Lime-rock, Gypsum, Marl Manure, &c.	$10
" "	Mineral and Spring Waters, - -	$10
" "	Ore, and Minerals generally, -	$10 to $20

The above charges to accompany Samples or Communications. No Analysis will be allowed to pass out of the Laboratory till paid for.

For Analysis enough of the above mentioned substances should be sent to make one pound, when dry; of Mineral or Spring Waters one gallon is required.

All Samples and Communications to be forwarded by Express, or post-paid, to Dr. Jas. H. Salisbury, No. 3 Everett House, cor. of Fourth Avenue and 17th strret, or presented in person at his Office, No. 1 Appletons' Building, over the Book Store, 346 Broadway, New-York.

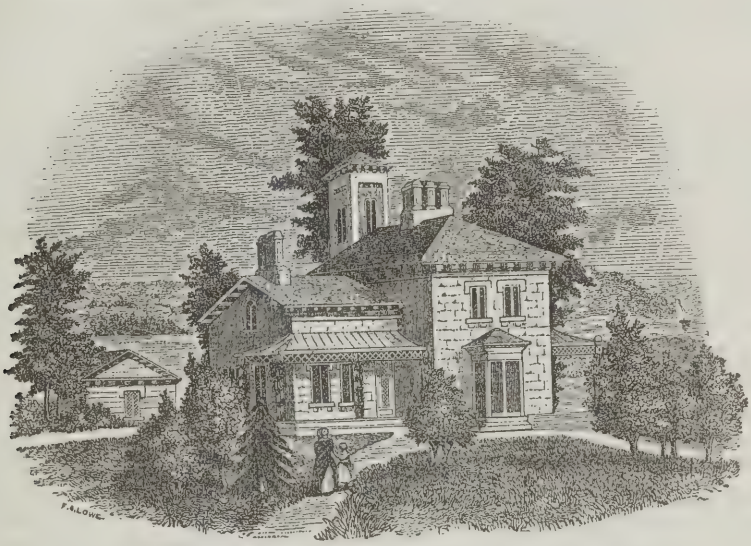
RURAL ARCHITECTURE.

We have lately received several enquiries in regard to plans for Farm Houses and out-buildings, from which we infer that more attention is being given to this branch of the farmer's "improvements," than formerly. It is to be expected that as the "bush" is cleared away, and the old log house that answered very well during the first period of the "settler's" life, begins to *settle* out of shape and comfort, that a desire should be felt to replace the "venerable pile" with a more ambitious, and more comfortable structure. The man who intends "to build," can now find very good models in actual use in the older townships, but the variations of style are so diversified, and convenience of arrange-

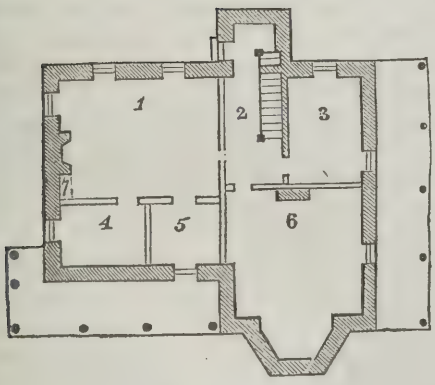
ment admits of so many modifications, that it is well to look about one before deciding on any particular plan.

The following design has been much admired. It is that of a cottage in the Italian style of architecture, and is well adapted for a farmer on a small scale, or for a village residence. We lately gave the design of a Farm House suitable for a large family. This will be found adapted to a different class of our readers.

"There is nothing" says Downing "that more powerfully affects the taste and habits of a family—especially the younger members of it—than the house in which it lives. An uncouth, squalid habitation is little likely to awaken that attachment to home, that love of good order, and that sense of propriety and elegance in social deportment which are so much developed by that home where a certain proportion, a certain fitness, and a sense of beauty are every where visible."

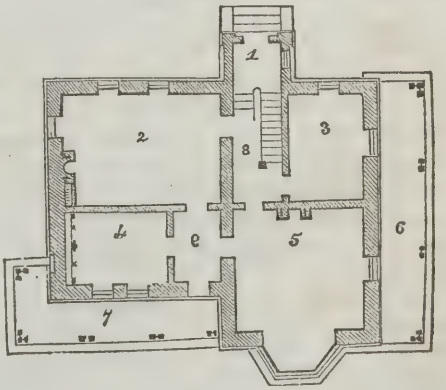


AN ITALIAN COTTAGE.



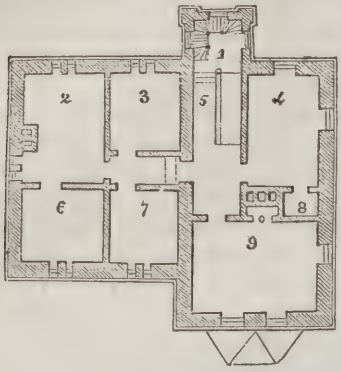
CELLAR APARTMENTS.

1. Kitchen,
2. Dining Room,
3. Bedroom,
4. Pantry,
5. Furnace or Store Room,
6. Cellar.



GROUND PLAN.

1. Entry,
2. Dining Room,
3. Nursery,
4. Library,
5. Parlour,
6. 7. Verandah,
8. Hall.



BED ROOMS.

The arrangements of the third floor will be understood from the plan. It might easily be varied, but the plan is probably as convenient as any that can be devised.

A NEW ARTICLE FOR ROOFING HOUSES.

The *Rural New Yorker* states that Judge Smith, of Honeoye Falls, a few days since, brought into his office a piece of board on which was spread, and perfectly united with it, an indurated coating as hard as stone. Judge Smith says that the composition is perfectly fire and water-proof, and admirably adapted to roofing and other kindred purposes. It may either be applied in the shape of a mastic immediately to wood, or it may be manufactured into sheets mixing it with paper pulp, and then laid on a roof like sheets of metal.

If the article proves as good as it promises, and as the inventor claims it will, it is an invaluable addition to the materials of the architect and builder. We copy below a paragraph from the *Washington Union* on the subject, from which it appears that the new roofing material has made a very favorable impression in the Federal City:

We have been shown a new article for roofing manufactured by James Smith of Haneoye Falls. It is composed of a stone found at Gibsonville, Liv. Co., N. Y, reduced to a powder, mixed with paper pulp, and moulded into sheets like hand made paper, which, when sufficiently dry, are saturated with some kind of drying oil. These substances are said to combine and produce a sort of petrified sheet, which is both water and fire-proof, which forms a cheap, durable and safe kind of roof. The sheets can be made in size and thickness to suit the convenience of purchasers, and are laid and confined with great facility. A gentleman of this city has applied some of this kind of roofing upon a building, and expresses entire confidence that it will be found to be as useful as the discoverer thinks it will. It is now while in an undried state entirely water-proof, and by exposure to the atmosphere will doubtless become petrified and fire-proof. We have seen this pulverized stone, which had been mixed with oil and applied in a thick coating upon a board, quite petrified, and as hard as common stone. In this condition it is unaffected by fire. The gentleman above referred to has so much confidence in this kind of roofing, that he intends to apply it upon dwellings next summer. Mr. S., the discoverer, has applied for a patent for this new composition of matter, and expects one will soon issue. From his account of the material it will prove a very useful discovery.

OVERHEAD PIPE IN THE SCHOOL ROOM.

It is common in school-houses, to use considerable overhead pipe from the stove, to increase the means for the radiation of heat. But, in my opinion, heat thrown out, overhead, is of no advantage in making a room comfortable, and does much injury to the health, producing a dull, irritable feeling of the head, successive returns of sick headache, loss of appetite for food, and a gradual decline in strength of body and vigor of mind. The sympathy between the head and stomach is such, that very few persons can be any length of time where heat is radiated directly upon the head, without the digestive organs being affected, and especially such as are predisposed to a dyspeptic habit. The feet may be kept warm, but the head must be cool, to enjoy health of body and vigor of mind. It is not uncommon for teachers and scholars to complain that their school labors wear upon their health; but it is not the study and teaching that impair it rather these, properly conducted, in a well regulated room as to heating and ventilation, may become auxiliaries to preserve health.

In my own school-room, the long reach of horizontal pipe overhead, I have had taken down and placed a short distance above the floor, extending from the floor to the perpendicular that goes up to the chimney. It has proved to add much to the comfort of the room, the oppressiveness that was before felt from the heated air, is now done away. Every school-room should be freed from overhead stove pipe, except what is required to reach vertically to the chimney.—*A Teacher, in Scientific American.*

MILK CLEAN.—The first drawn milk contains only 5, the second 8, and the fifth 17 per cent. of cream.

Miscellaneous.

LECTURE ON THE GEOLOGY OF CANADA.

A lecture on this subject was recently delivered by T. S. Hunt, Esq., before a very large and respectable audience at Montreal. The lecturer first observed, that a man who examined the soil would find it underlaid by solid rocks, and soon learn the fact that indeed the whole of the earth-crust consisted of solid rocks; he would proceed then to notice the different qualities of these rocks, distinguishing lime-stones such as we find in our quarries, slates, sand-stones, &c., in parallel layers sometimes horizontal, sometimes dipping at slight or sharp angles. He would perceive also that there existed a certain order in their arrangement. Thus he would find, in the vicinity of Montreal, going upwards; first sand-stone then lime-stone and lastly slates. Further above this he would find another class of rocks, without this stratified structure, such as granite, winstone, trap, and perceive that the beds of lime-stone contained the impressions of plants, shells, &c. If he examined the slates he would meet with impressions of other shells and plants, different from those on the lime-stone. Any one who had made all these observations, had already begun the study of the science of Geology, whether he knew the name of it or not.

The lecturer then intimated that the present boundaries of oceans and lands had not always existed. It was the sea only that was stable; the level of the earth-surface had been constantly changing. Thus upon the soil of Canada, we had at the present day the evidence of several elevations and subsidences. In a similar manner, the North-Western part of Europe was slowly rising, and the Southern part probably sinking. Coming up the Gulf of St. Lawrence we should find on the right hand side a chain of hills stretching along the water till we came to within thirty miles of Quebec, where they were seen stretching inland, till at Montreal they were thirty miles from the river. These same hills continued on the northern side of the Ottawa, crossing it above Bytown; they stretched across Canada West, skirted the shore of Lake Huron, and had been followed by Sir John Richardson to the Arctic Ocean. These, said the lecturer, were the oldest known rocks in the world.—They were crystalline, granite, gneissoid in their character, of which we could form an idea by examining those large boulders brought down by the ice and scattered along the shore. These hills were in form of mountain ridges, running from north-east to south-west, rising from two to three thousand feet; they had constituted at a very early epoch the whole of the American continent. In the north of New York they had formed an island, or perhaps a peninsula. Similar small islands existed near the sources of the Mississippi, in Arkansas, in the north of Scotland, and in Scandinavia; and these were all the vestiges we had at the present day of the then continent. The rocks of this small continent had been called Laurentia rocks. In the ocean to the east, said the lecturer, there had probably been other lands that had now disappeared. Of these Laurentia rocks, the first deposits were found on the northern shore of Lake Huron, and upon Lake Superior, consisting of sandstone, slate and limestone. At the early period when these deposits took place, there had probably been no animal life on the earth, at least no vestiges of plants, shells, etc., appeared on the rocks. It was impossible to point out the time required for the formation of such deposits which had the thickness of several thousand feet, or to find a calendar to measure its years. While astronomers asked for unlimited space, the geologist asked for as unlimited time, (applause.)—Mr. Hunt then showed that these rocks were the same as those that had been called Cambrian rocks in England, and said they were very interesting because they were the copper-bearing rocks of this region. At that early period, great volcanic disturbances had taken place. Out of huge fissures molten matter had flowed and covered hundreds of miles, having a thickness of about a hundred feet. These overflows had been covered with beds of sandstone, and other overflows had taken place until this great thickness accumulated. Veins could be seen in these rocks containing the ores of copper, silver, and iron. The interstratified traps had been intersected by other volcanic rocks in the form of dikes containing pure copper, where molten copper had been thrown up from the depth of the globe. After this began what was called the Silurian epoch. Upon the borders of the Laurentian and Cambrian rocks there had come deposits of sand, from the wear and tear of the older rocks, reaching the thickness of from 2 to 300 feet, and on them we found the first vestiges of animal and vegetable life. These remains consisted of sea-weeds and one or two species of shell-fish. The principal genus was now called lingula, it was like a mus-

cle, attached by a stem to the rocks; and a similar species existed in the tropics. Mr. Hunt then observed that the lingula was a curious illustration of perpetuation, for, whilst thousands and thousands of animals had been created, whilst the mighty races of fishes and reptiles had disappeared, the humble lingula lived still in the present oceans, having outlived all these changes, (Applause.) The lingula shell was composed of matter similar to bones, and formed the connecting link between shell and vertebrated animals. On these layers of sandstone, even the ripples caused by the wind blowing in different directions had been preserved, and marks of raindrops were likewise left up to the present day. A little higher we found the sandstone mixed with lime, and there we perceived the impressions of other shells and of somewhat larger animals. Upon the sandstones at Beauharnois there had been found the tracks of animal supposed to be a tortoise, by the late Mr. Abraham of the *Transcript*. A specimen had been shown by Mr. Logan to Professor Owen in London, who at first confirmed this opinion, but afterwards concluded that they were the tracks of some huge lobster or crab.—The length was from six to eight feet, and it had a long flexible tail. The distance between the feet was about 10 inches, and the animal must, therefore, have been of considerable size. These limestones had the thickness of from two to three hundred feet, and immediately overlaying them were the limestones of the Island of Montreal, having a thickness of 1200 feet.

Mr. Hunt then explained the mode of calculating their thickness, which, he said, could be calculated from their angle, the strata having been inclined from the movements of the earth crust. If we observed these limestones, we found remains of corals, shells, etc. The limestones over the whole of Canada and in the East of the United States, were characterized by the same kind of fossils, by means of which we could also identify certain rocks as of the same age as our Montreal limestones. Above these limestones we met with soft black slates one or two hundred feet in thickness, followed by a great accumulation of greyish, greenish and reddish slates, sandstones and limestones, which were seen spread over the region between the St. Lawrence and Yamaska rivers. Along a line running up the valley of Lake Champlain and stretching by St. Hyacinthe to the vicinity of Quebec, there was an axis of elevation which might be regarded as dividing the fossiliferous rocks into two great divisions, the eastern and western. They exhibited, in a rude way, successive zones of rocks, sweeping around and dipping beneath basins of coal-bearing rocks. These, on the one side, were in Nova Scotia and New Brunswick, and on the other in Michigan and Pensylvania. While in the East these rocks were very much disturbed and folded up into mountain-chains; those in the West were very nearly horizontal. Between those lower rocks and the coal-basins there existed two other vast formations, and, in each case, all of these must be crossed before we could arrive at the coal. The consequence was that the coal-bearing rocks were only met with in the Eastern part of Canada, where the base of them appeared in the Bay de Chaleur with the characteristic fossils of the coal and small seams of that combustible.

DAYS WITHOUT NIGHTS.

There is nothing that strikes the stranger more forcibly, if he visits Sweden at the season of the year when the days are longest, than the absence of the night. He arrived at Stockholm from Gottenberg, 400 miles distant, in the morning, and in the afternoon went to see some of his friends—had not taken note of time, and returned about midnight; it was as light as it is here half an hour before sundown. You could see distinctly. But all was quiet in the street; it seemed as if the inhabitants were gone away or were dead. No signs of life, stores closed.—The sun goes down at Stockholm a little before 10 o'clock. There is a great illumination all night, as the sun passes round the earth towards the north pole, the refraction of its rays is such that you see to read at midnight. Dr. Beard read a letter in the forest near Stockholm at midnight without artificial light. There is a mountain at the Bothnia, where, on the 21st of June, the sun does not go down at all. Travellers go there to see it. A steamboat goes up from Stockholm for the purpose of carrying those who are curious to witness the phenomenon. It occurs only one night. The sun goes down to the horizon, you can see the whole face of it, and in five minutes begins to rise. Birds and animals take their accustomed rest at the usual hours. The hens take to the trees about 7 o'clock P. M., and stay there until the sun is well up in the morning, and the people get into the habit of rising late too.

USES OF THE ROSE.

Rose Water is distilled from the petals of pale roses, in preference to deep red ones, mixed with a small quantity of water, and in France those of the musk rose are preferred, when they can be obtained. This product of the rose was known to the Greeks in the time of Homer, and to Avacenna, among the Arabs, A. D. 980. It is more or less in use, in every civilized country, for the toilette, and on occasions of festivals and religious ceremonies. Vinegar of Roses is made by simply infusing dried rose petals in the best distilled vinegar. It is used on the Continent for curing headaches produced by the vapors of charcoal, or the heat of the sun. For this purpose, cloths or linen rags, moistened with the vinegar, are applied to the head, and left there till they are dried by evaporation. Spirit of Roses is procured by distilling rose petals with a small quantity of spirits of wine. This produces a very fragrant spirit, which, when mixed with sugar, makes the liqueur known in France by the name of *l'huile de rose :* it also forms the groundwork of the liqueur called *parfait amour.* Conserve of Roses is prepared by bruising in a mortar the petals, with their weight of sugar, till the whole forms a homogeneous mass. In the earlier ages, according to Rosembourg, in his "History of the Rose," published in 1631, the rose was a specific against every disease. It was much in use in the time of Gerard, and is still employed in the composition of electuaries, and many other medicines. Attar of Roses—essence, attar, otto, or, as it is sometimes called, butter of roses—is the most celebrated of all the different preparations from this flower, and forms an object of commerce on the coast of Barbary, in Syria, in Persia, in India, and in various parts of the East. In England, it is usually called otto of roses, a corruption of the word "attar," which, in Arabic, signifies perfume. This essence has the consistence of butter, and only becomes liquid in the warmest weather ; it is preserved in small flasks, and is so powerful, that touching it with the point of a pin will bring away enough to scent a pocket handkerchief for two or three days. The essence is still procured almost in the same manner by which it was first discovered by the mother-in-law of the great Mogul, in the year 1612, viz., by collecting the drops of oil, which float on the surface of vessels filled with rose water, when exposed to a strong heat, and then congealing it by cold. Honey of Roses is made by beating up fresh rose leaves with a small quantity of boiling water, and, after filtering the mass, boiling the pure liquor with honey. This was formerly much in use for ulcers in the mouth, and for sore throats. Oil of Roses is obtained by bruising fresh rose petals, mixing with them four times their weight of olive oil, and leaving them in a sand heat for two days. If the red Rose de Provins be used, the oil is said to imbibe no odor ; but, if the petals of pale roses be employed, it becomes perfumed. The oil is chiefly used for the hair, and is generally sold in perfumers' shops, both in France and England, under the name of *l'huile antique de rose.*

WHY EPIDEMICS RAGE AT NIGHT.

It was in one night that four thousand persons perished of the plague in London. It was by night that the army of Sennacharib was destroyed. Both in England and on the continent, a large proportion of cholera cases, in its several forms, have been observed to have occurred between one and two o'clock in the morning. The danger of exposure to the night air has been a theme of physicians from time immorially ; but it is remarkable that they have never yet called in the aid of chemistry to account for the fact.—It is at night that the stratum of air nearest the ground must always be the most charged with particles of animalized matter given out from the skin, and deletorious gases, such as carbonic acid gas, the product of respiration, and sulphuretted hydrogen, the product of the sewers. In the day gases and various substances of all kinds rise in the air by the rarefaction of the heat. At night when this rarefaction ceases they fall by an increase of gravity, if imperfectly mixed with the atmosphere, while the gases evolved during the night, instead of ascending, remain near at the same level. It is known that carbonic acid gas, at a low temperatvre, partakes so nearly of the nature of a fluid, that it may be poured out of one vassel into another. It rises at the temperature at which it is exhaled from the lungs, but its tendency is towards the floor, or the bed of the sleeper, in cold and unventilated rooms. At Hamburg, the alarm of cholera at night in some parts of the city was so great that many refused to go to bed, lest they should be attacked unawares in their sleep. Sitting up they probably kept their stoves or open fires burning for the sake of warmth, and that warmth giving the expansion to any deleterious gases present, which would best promote their escape, and promote their dilution in the atmosphere, the means of safety were then unconsciously assured. At Sierra Leone, the natives have a practice in the sickly season of keeping fires constantly burning in the huts at night, assigning that the fires keep away the spirits, to which in ignorance they attributed fever and ague. Latterly, Europeans have begun to adopt the same practice, and those who have tried it assert that they have now entire immunity from the tropical fevers to which they were formerly subjected. In the epidemics of the middle ages fires used to be lighted in the streets for the purification of the air, and in the plague of London, in 1685, fires in the streets were at one time kept burning incessantly, till extinguished by a voilent storm of rain. Latterly trains of gunpowder have been fired, and cannon discharged for the same object ; but it is obvious that these measures, although sound in principle must necessarily, though out of doors, be on too small a scale, as measured against an ocean of atmospheric air, to produce any sensible effect.—Within doors, however, the case is different. It is quite possible to heat a room sufficiently to produce a rarefaction and consequent dilution of any malignant gases it may contain, and it is of course the air of the room, and that alone, at night that comes in contact with the lungs of the person sleeping.—*Westminster Review.*

Domestic Economy.

To Clear Coffee.—When nothing else can be obtained, mix a little Indian meal with the coffee before putting it to boil.—*Ohio Cult.*

Squash Pies without Eggs.—To make the best of squash pies (when eggs are 25 to 50 cents per dozen) use none, but put in the place of them soft crackers powdered fine.

Vegetable Seasoners.—Parsley, celery, thyme, sage, onions, garlic, and other seasoners, should not be put into soups or stews until the soup is nearly done; chop fine, and put in five minutes before the soup is taken from the fire.

Boiled Almond Pudding.—Blanch one lb. of almonds, beat them in a mortar to a smooth paste with three tea-spoonfuls of rose water. Add one gill of wine; one pint of cream; one gill of milk; one egg; one spoonful of flour.—Boil one-half hour.

Cheap Lemon Flavor.—When lemons are plenty, procure a quantity, cut them into thin slices, and lay them on plates to dry in the oven; when dry put them into a tight bag, or close vessel, in the store-room, where they are both handy and agreeable for almost anything.

To Improve Tea.—M. Soyer recommends housekeepers to place the tea-pot with the dry tea in it upon the hob for a little while before making. This plan certainly improves both strength and flavour. Rain-water, when pure, is the best for making all infusions, including tea of course; since the solvent powers of water are in proportion to its freedom from earthly salts.

Mint Sauce.—Many of our country friends do not know what a luxury they deprive themselves of, when they eat lamb either boiled or baked without mint sauce. Set a few roots of spearmint in one corner of the garden, and they will soon furnish an abundant supply. Strip off the leaves and chop them fine, add an equal amount of sugar, and cover the whole with vinegar. A small tea-cupful of the mixture is sufficient for a large family. Try this, and see if it is not preferable to gravies.—*Ohio Cultivator.*

Take nice sweet apples, pare, core and quarter them. Boil the cores and parings in a little soft water. Strain and add sugar to your taste for a syrup; then add the apples and cook them as long as you can without breaking; then a second lot, and you have a cheap sweetmeat.

"Scrapple."—I observe a call for a recipe for making "Scrapple," and some other homely dishes. Here is one that has been a favorite, with two generations.

Boil two or three pig's "faces," a liver, chine-bones, &c., (or omit the liver, if you choose,) till the meat comes off the bones and will pick to pieces readily. Take out the meat, and half thicken the liquid with Indian meal, which allow to boil, whilst you pick the meat off the bones, and chap the liver fine; then return the meat &c., into the pot, and stir in buckwheat flour, till it is thick as thick mush. This done, season the mixture with pepper, salt and powdered sage, and put it into pans to cool. Next morning, fry it brown in slices, and see if your children will not decide that the "waste is the *best* after all."—*Correspondent of R. N. Yorker.*

Pork Cake.—A Yankee lady has just handed me the following recipe with a request that it be published. Take 6 oz. pork (fat) chopped fine, pour on ½ pint hot water, 1 cup sugar, ½ cup molasses, two teaspoonfuls, saleratus, fruit and spice to your taste and flour to thicken, The above recipe makes a great saving, especially when pork is so cheap and butter so high.—H.—*Mill Plain, Conn.*

Eggs, Convent Fashion.—Boil four eggs for ten minutes, put them in cold water, peel and slice thin one onion, put into a frying pan one ounce of butter; when melted add the onion, and fry white; then add a tea-spoonful of flour, mix it well, add about half a pint of milk, till forming a nice white sauce, half a tea-spoonful of salt, and a quarter ditto of pepper; when nicely done, add the eggs, cut into six pieces each, crossways, toss them up—and when hot through, serve on toast.

Dropped Eggs.—Take a nice saucepan to a tinman and have a tin plate cut to fit it. Then have a few holes cut therein, and a wire handle inserted in the centre, Pour hot water into the sauce pan and break your eggs gently into the water, placing them on the range till the whites harden. Then lift them out by the handle and place them on a plate without removing them from the tin. This may cost 12½ cents, and save many shillings worth of eggs in the year. Cooked thus eggs look neater than fried, and are more wholesome, and can be removed to bacon, pork or buttered toast.

Tomato Catsup.—One gallon skinned tomatoes, four table spoonfuls of black pepper, four table spoonfuls of salt, three table spoonfuls of mustard, one table spoonful of allspice, eight pods of red pepper. Contents ground *fine*, simmered slowly in vinegar in a bell-metal kettle three or four hours and strained through a wire sieve and bottled close. So much vinegar is to be used as to leave half a gallon of liquor when the process is over.

Beans for Soup.—The use of beans as an article of food, is not so considerable as it should be. Beans are the most nutritious of all kinds of food used by man. Chemical analysis, and the experience of those who make extensive use of them, demonstrates this. Besides they are the most economical food which can be used for the support of a family. Those who find the times hard are most respectfully invited to try the experiment.

To provide an excellent dinner—healthful, palatable and nutritious—take a pint of beans, with one gallon of water, and the beef bones we are accustomed to throw in the street. Boil all together (adding a few potatoes if convenient,) until the beans become soft—and salt and pepper to suit the taste, and dinner is ready. Such a dinner costs next to nothing; and will rest easier upon the stomach than venison steaks, quail or patridge, washed down with champaigne.

A piece of fat beef thrown into the pot, will give a pretty good flavor to soup, porridge, or such a dish as I have named. But if you want the genuine flavor use *bones*—such bones as are usually thrown away. There is a flavor obtained from the bones, which is not obtained from the fat, which is not given from solid meat.—*N. Y. Jour. of Com.*

To make Blackboards.—An appliance for blackboards can be made by boiling 1 lb. logwood in water enough to cover it, and adding ¼ oz. of green vitriol. This is superior to paint, as it stains the wood, and will not wear off, dries in a few minutes, and bears no gloss.

Soap.—When preparing to make soap, add a little old soap to the ley and grease. This will greatly facilitate the labor of the making.

To Cure Earache.— Earache may be relieved by, dropping a little sweet oil and laudanum, warm, in to the ear, and applying hot salt in flannel bags so as to keep the part constantly warm.

Medical Recipe.—Irish remedy for worms — Garlic dissolved in good whiskey and kept in a bottle for use, is said to be a sovereign remedy for worms. Dose, from a tea-spoonful to a table-spoonful every morning.

A Good Salve.—A friend who has tried it gives us the following recipe:—Boil hemlock bark until you obtain its strength, then strain the liquor and evaporate down to the consistency of molasses; to this add an equal part of lard. This is valuable for chapped hands, lips, &c.—*Maine Far.*

Liniment.—Mr. A. D. Burt sends us the following recipe, which he says is one of the best ever used for sprains, lameness, &c., of man or beast. Its constituents are certainly of the right kind, and the compound undoubtedly excellent:—3 oz. oil origamum, 4 oz aqua ammonia, 2 oz. tincture of opium, ½ pint spirits camphor; alcohol enough to fill a quart bottle, The liniment should be well rubbed in when applied.—*Rural N. Y.*

Washing Recipe.—The following recipe has been peddled through the country, and sold for one dollar. It saves one-third of the labor of washing:—Take one lb. of saltpetre, and dissolve it in one gallon of cold rain water, and cork it up in some tight vessel. When you are going to wash, add three large spoonfuls to each pint of soap; make a suds with this, and soak the clothes 20 or 30 minutes; then rub them out and put them over the fire in clean *cold* suds. Let them come to the boil five minutes; then take them out and rense them.—*Ohio Cultivator.*

Fifteen Hundred Knuckles at the Tub.—The New York Correspendent of the *Charleston Courier* writes:—

"The latest invention is a new washing machine now in operation at the Astor House. It is called the 'great knuckle.' In the card of the owner it is stated that this new machine is saving from ten to fifteen girls a day in the wash-room of the Astor House.—A vial washing machine man at the Crystal Palace offered a cup valued at $50 to any person who could produce anything that would beat his. The great knuckle washing-machine man will give a cup valued at $500 to any one who will bring his machine to the Astor House and wash one dozen pieces while he is washing three dozen. He says that instead of using one pair of 'knuckles,' as old Eve commenced with, his machine is a combination of from 200 to 1500. Great are the merits of washing-machines!"

Saleratus.—A writer in the Boston Journal thinks that of three hundred thousand children in this country, who died under ten years of age, at least one hundred thousand might survive, but for the effects of saleratus. He relates a curious story of a sickness in a boarding house at Williamstown, Mass., caused by eating biscuits, puddings, &c., full of saleratus. Out of fifteen boarders, thirteen were taken sick, and were confined a long time; two of them died, another barely escaped death, and the others recovered after severe sickness.—Prof. Tatlock and Rev. Mr. Crawford, who ate but little of the food, escaped illness.

Liquid Opedildoc.—Take two quarts of proof whiskey, or other proof spirits, warm it over coals, being careful to prevent a blaze. Dissolve in it a pint of soap; when cold, put it in a bottle and one ounce of camphor. It is then ready for use. This is an excellent remedy for sprains or bruises, and should be kept by every owner of horses.—*Tip. Farmer.*

To Keep Mutton.—As soon as your mutton is dressed, place it in some situation where it will freeze. When thoroughly frozen, remove it to an out building, or some other convenient place, where it will be in no danger from dogs or other animals, and having packed it in a close and compact heap, cover it carefully with the pelts. Secured in this way, mutton, or other fresh meats may be preserved perfectly sweet, and in possession of its juiciness, till late in the spring. We have known it kept so from November till the first of April, The pelts being a non-conductor, prevent its thawing.—*Ger. Teleg.*

Washing Butter with New Milk.—A writer in the *Boston Cultivator*, over the signature of 'Many,' says he finds in a French work the following remark, and asks if any of the butter-markets in this country have ever tried it, and if so with what result The remark is as follows:—To procure butter of an excellent flavor and extreme delicacy, it must be washed finally with new milk. The cream of the milk is incorporated with the butter and communicates to it its sweetness and delicacy. *Ex.*

The practice of washing butter with new milk is not new, or common only to France; a large trade is carried on in and about London, in very choice fresh butter. The dealers purchase in the country butter that has been salted, but is otherwise sweet. This is churned in sweet new milk, and comes out in due time a very delicious article, which is sold daily at a very high figure. It is a capital process for renovating old butter.

Tool Houses.—Provide yourself with a good tool house. Locate it in some convenient place, and whenever you have done using an implement for the season, cleanse and house it. Structures of this kind cost but little, and may be made the means of saving a great deal. The exposure of costly farming implements during winter, is a greater injury to them, as a general thing, than the use of them during the period they are wanted for active service in the field. The corrosion of iron by rusting, and the rending and warping of wood by moisture, frost and heat, are evils the extent of which few appreciate.—*Germantown Telegraph.*

Home Made Chloride of Lime.—Prof. Nash says, Take one barrel of lime and one bushel of salt; dissolve the salt in as little water as will dissolve the whole; slack the lime with the water, putting on more water than will dry slack it, so much that it will form a very thick paste; this will not take all the water; put on, therefore, a little of the remainder daily until the lime has taken the whole. The result will be a sort of impure chloride of lime, but a very powerful deodorizer, equally good, for all out-door purposes, with the article brought under that name at the apothecary's, and costing not one-twentieth part as much. This should be kept under a shed or some out-building. It should be kept moist, and it may be applied wherever offensive odors are generated, with the assurance that it will be effective to purify the air, and will add to the value of the manure much more than it costs. It would be well for every farmer to prepare a quantity of this, and have it always on hand.

Editorial Notices.

DEVON HERD BOOK.

We would direct the attention of breeders of Devon cattle to the advertisement of the 2nd vol. of the Herd Book, which has just been issued, and may be had at Albany, N. Y.

PURE BRED STOCK—MR. MORRIS' SALE.

Those of our readers who may wish to purchase pure bred stock of the best description would do well to attend the forthcoming sale, of L. G. Morris, Esq., the distinguished American Importer and Breeder. The importations of Mr. Morris have been made from the most celebrated herds of England. We intend to pay a personal visit to Mr. Morris' farm shortly, and will be able to speak more fully in regard to his cattle. His advertisement will be found in this present number.

THE ANGLO-AMERICAN MAGAZINE: Feb. 1855. Toronto: Maclear & Co.

Quite an average number of this interesting monthly. Its principal contents are;—The new Gauger, by James McCarrol; Early Rising; Spiritual Literature;—The Rivals, a story of Texas Border Life; Literary and Artistic Celebrities, No. 2; John Gibson Lockart, a most interesting paper;—Recollections of a Potrait Painter;—Siege of Quebec;—Uncle Philip's Last Voyage, by Mrs. Trail; Kirri Cottage, with a well executed illustration; Men of Letters among the Romans; The Forest Hut; Facts for the Farmer; with the Editor's Shanty, abounding as usual with sparkling wit and racy remarks, always however imbued with a generous spirit.

We are glad to hear that this native production is steadily making progress. It deserves a general and hearty support by the British American public.

CHAMBERS' JOURNAL: January, 1855.

We have received the 12th monthly part of the new series of this well known periodical, from A. H. Armour, & Co., of this city, who supply subscribers with the genuine *British* edition, for the very moderate charge of two dollars a year. Chambers' Journal is surpassed by no similiar publication for the healthy tone of its literature, and the adaptation of its matter to the practical wants of life. The Edinburgh edition can be procured of booksellers in all the principal towns of the Province.

THE ELEMENTS OF AGRICULTURE; A BOOK FOR YOUNG FARMERS: By G. E. Waring, Jun. New York; D. Appleton & Co., 1854.

An excellent little publication, and well adapted to the end for which it has been prepared, viz., to initiate young people, whether at school or at home, into a comprehension of the leading truths and laws of scientific and practical agriculture.

In the first section the author treats of the plant, its structure, composition, and means of growth. Next of the soil; its nature, properties and distribution. Then follows the important subject of manures, with information on their economical application: a matter with which every farmer ought to make himself well acquainted. The methods of culture are there described, with some account of the principles and operation of draining, sub-soil ploughing, &c. The work concludes with a few observations and directions on the subject of analysis.—The work will be found useful in schools as well as private families.

Market Review.

CANADIAN, AMERICAN, ENGLISH & FOREIGN.

TORONTO MARKETS.

MARCH 3, 1855.	s.	d.		s.	d.
Flour—Millers' extra superfine. per bbl.	37	6	a	0	0
Farmers', per 196 lbs.	3	9	a	37	6
Wheat—Fall. per bushel, 60 lbs.	7	0	a	7	6
Spring, per bushsl, 60 lbs	0	0	a	0	0
Oatmeal, per barrel	38	9	a	40	0
Rye. per bushel. 56 lbs	6	9	a	7	0
Barley, per bushel, 48 lbs	4	2	a	4	6
Oats, per bushel 34 lbs	2	9	a	3	0
Peas. per bushel	3	9	a	4	6
Potatoes, per bushel	2	9	a	3	0
Apples. per barrell	6	3	a	8	9
Grass Seed, per bushel, 48 lbs	5	9	a	8	9
Clover Seed, per bushel.	30	0	a	32	9
Hay, per ton.	100	0	a	140	0
Straw, per ton.	50	0	a	60	0
Onions, per bushel.	7	6	a	0	0
Butter—Tub, per lb	0	9	a	1	0
Fresh, per lb	1	0	a	1	3
Lard, per lb.	0	7	a	0	8
Cheese, per lb	0	5	a	0	0
Pork, per 100 lbs	30	0	a	37	6
Fresh, per lb	0	5	a	0	0
Beef, per 100 lbs	25	0	a	27	6
per lb	0	6	a	0	7½
Hams, per 100 lbs	45	0	a	50	0
Bacon, per 100 lbs	45	0	a	50	0
Firewood, per cord.	25	0	a	30	0
Wool, per lb	0	11	a	1	1
Sheepskins, fresh slaughtered	0	0	a	2	6
Calf-skins, fresh, per lb	2	3	a	0	0
Hides, per 100 lbs	20	0	a	0	0
Coal, per ton	50	0	a	52	6
Turkies, each.	3	6	a	4	0
Geese, each.	2	3	a	2	10
Ducks, per couple	1	10	a	2	2
Fowls, per pair	1	3	a	1	6
Eggs, per dozen	1	3	a	1	6
Veal, per lb, by the quarter	0	4	a	0	5
Mutton, per lb, by the quarter	0	3	a	0	4
Bread (large loaf)	0				

REMARKS.

February 28, 1855.

The supply of Farmers' produce for the past month has not been very abundant. Wheat, especially, has not been plenty. Until within the last week, there was but little Flour coming in. But since the recent thaw the mills have been kept going, and there were several large lots in the market to-day. Farmers' Flour in bags brings from 33s 9d to 37s 6d, Millers' in barrels brings 37s 6d. Wheat has been bought readily during the month at from 7s a 7s 6d per bushel. It is now, however, bringing from 7s 9d to 8s 1d. This rise is mainly attributed to competition among buyers, and will not be of long duration. Money is not perhaps so scarce, but there cannot be much on hand. Pork has been plenty, though not exceeding the demand,—it is bringing $7½ per 100 lbs. Lard 6½d. Potatoes and Oats scarce,—the former selling at 3s a 3s 4d, and the latter 3s. Peas 5s. Fresh Butter selling readily at 1s 1d a 1s 3d. The sleighing within a mile of the city is very bad, and it is almost impossible to bring in a heavy load.

NEW YORK MARKETS.

We have reports by mail as late as the 20th Feb. from which we cull the following:—

Flour and Meal.—With moderate arrivals of Western and State Flour, and a brisk demand, the market has improved, and still has an upward tendency; the inquiry is confined to the East and home trade; the low grades are not so plenty, and these have advanced; the better grades are held with increased firmness, and are in request: the sales of Western Canal are 7,700 bbls, at $8 12½ a $8 37½ for common to good State; $8 62½ a $9 for mixed to good Michigan, Indiana, and common to good Ohio; and $10 75 a $12 for extra Genesse. Canadian Flour is firm but not very active; the demand is mainly confined to the City trade; sales of 1,150 bbls. at $3 87½ a $9 in bond, and $9 25 a $10 duty paid. Rye Flour is quiet at $6 25 a $7 37½ for fine to superfine. Corn Meal is inactive, at $4 37½ a $4 50 for Jersey, and $4 75 for Brandywine. Buckwheat Flour is plenty, and in limited demand, at $3 50 a $4 per 100 lb.

Grain.—The market is again better for Wheat; the demand is firm for milling. Sales of 5,500 bushels prime White Genesee, at $2 55, and 2,000 bushels prime Red Long Island on private terms. Rye is firm and in fair request. Sales of 2,200 bushels, at $1 28. Barley is inactive, at $1 a $1 29. Oats are more plenty. Sales of Jersey, at 52 a 53c. and State and Western, at 63 a 69c. Corn is decidedly lower; the arrivals are large, and the demand is fair for export at the inside prices. There is more doing for the East. Sales of 70,000 bushels, at 95c. for Southern Mixed; 95 a 96c for Jersey Yellow; 96 a 93c. for Southern Yellow; 97 a 99c. for Southern White. Old Western Mixed nominal.

Provisions.—There is a fair enquiry for Pork, and the market is better. The arrivals are not so large. Sales of 900 bbls. at $12 62 a $12 75 for old Mess. $14 37½ a $14 50 for new Mess $17 for Clear, $12 37 a $12 44 for sour Mess, $14 50 a $15 25 for Western Prime Mess, and $15 75 a $16 for City do. Included in the sales are 22 bbls. India Mess at $23—the first sale of the season. Beef is quite firm, but not active. The arrivals are limited. Sales of 150 bbls at $8 62½ a $11 for country Mess, $13 50 for Vermont do., 14 25 a $15 for repacked Chicago, and 5 50 a $7 for country Prime.

Butter is better and in request. Sales of Ohio at 15 a 20c, State at 22 a 27c, and Orange Co. at 28 a 31c. Cheese is firm and in fair request at 9½ a 10½c.

Seeds—A fair inquiry for new Clover at 10¾ a 11½c. Timothy is in request at $3 for good Reaped. Rough Flax is in demand at 1 80 a $1 85 per 56 lb. Linseed is very firm and in fair request, sales at Boston of 1,500 bags, to arrive, at $2, cash and time, and 300 bags on the spot, at the same price.

Latest by Telegraph.

February 27.—There was but little doing in Flour, and nothing in Canadian. New York Flour was bringing 8 25 a $8 75, and Western 8 94 a $9 31. Grain steady. Wheat $2 25. Good sale for Pork. Mess selling at $15 37. New $15.

ENGLAND.

The English grain markets for the week ending Feb. 10th, the latest dates that had reached us before going to press, were rather declining, although prices were generally supported. The stocks holds are described as security. At Liverpool the demand for Wheat was of a very limited character, and prices must be quoted 1d to 2d per 70lbs lower. Flour met only a very moderate sale, and holders had to concede some slight reduction. Indian Corn had been little dealt in, the shipments to Ireland having fallen off considerably, and all descriptions must be noted 6d per 480lbs cheaper. Oats had given way 1d per 45lbs, and Oatmeal 6d per load.

The Provision trade had not presented any material change during the week. The demand for Irish Butter continued exceedingly dull, being confined to the best brands of southern at barely late rates, while purchasers quite neglect the middling and inferior descriptions, although offered at lower prices. Select brands of Waterford, 102s to 103s sterling; Kilkenny, Carlow, and Wexford, 99s to 101s; Limerick and Sligo, 91s to 36s per cwt. Irish Bacon in moderate request without alteration in value. Very little old American in the market, but new is coming forward more plentifully. Lard inactive and prices rather easier. American beef and Pork for ships' stores in moderate request at late rates.

The following are the Liverpool quotations for American and Canadian grain and flour. The price is stated "per 70 lbs", instead of 60 lbs, and in sterling. To make a comparison with Canadian prices, convert the amount into dollars and cents at the rate of 24 cents to the shilling and subtract a 7th.

	s	d	s	d
Wheat, per 70lb.				
Canadian, mixed and red	11	0	11	9
white	12	0	12	3
United States, red	11	6	12	3
white	12	4	12	10
Danzig, high mixed	12	6	13	0
Pomranean & Mecklenberg	12	6	12	0
Odessa, Polish, red	10	4	10	10
common	10	2	16	6
Egyptian	8	0	8	9
Barley, 60 lb	4	1	5	2
Oats, Russian, per 45lb	5	9	3	10
Beans, European, per qr	41	0	45	0
Egyptian, per 480 lb	40	0	42	0
Pease, Baltic, &c. white, qr	52	0	55	0
Canadian	50	0	53	0
Indian Corn, per 480 lb.				
American, white	44	0	45	0
yellow	43	6	44	0
European, yellow	43	6	44	0
Indian Meal, per 196 lb	21	0	22	0
Flour, per barrel 166 lb.				
Canadian sweet	42	0	44	0
Western Canal, sweet	38	0	43	0
Prime Vir. & fancy brands	14	6	45	6
Ohio	44	6	45	6
Philadelphia & Baltimore	40	0	44	6
New Orleans	43	6	45	0

WHAT IS WANTED IN A HORSE.—This is well stated in the *Transactions* of the Onondaga Co., Ag'l Society, in substance as follows; Horses are wanted, first for speed on the road, second, for conveying heavy loads quickly. For the first they have no competitors among our domestic animals; for the second none but the ox and the mule. Either of these is kept at less expense, less risk, and less care. The horse compensates this increase solely by his *speed*. Celerity and power united, sum up in two words the peculiar requisites of the horse.

THE

CANADIAN AGRICULTURIST,

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture, Horticulture, Farm Mechanics* and to the advancement of the *Farmers' interests generally*. It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c. and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, besides Editorial and Miscellaneous matter, Reports of Farmers' Clubs, Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributers to this journal.

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production*, and asks no man's support under a false name. It is a true, not a spurious *Canada Farmer*.

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Twenty copies or upwards, each ..... 2s. 6d.
Single copy ..... 5s.

*** The *Agriculturist* is not liable to *Postage*.

☞ Newspapers inserting the above will do us a favor, and confer themselves to a copy without exchange.

WM. McDOUGALL,
Publisher, Toronto.

January, 1855.

DURHAM BULLS.

THE SUBSCRIBER has several yearling Durham or Short-horn Bulls for sale from the most renowned breeds ever imported into this country. Parties wishing to purchase will please call.

P. FISHER.

Nelson, 25th Jan., 1855. 2-3

SHORT-HORN BULLS.

R. WADE, JUNIOR, of Cobourg, has Five Young DURHAM BULLS for Sale, and would be glad of a call from parties wishing to purchase.

Cobourg, January 1, 1855. 1-3

ENGLISH HORSES!

FOR SALE.

BY Order of the Executors of the late CHARLES COOPER. *Two Superior Agricultural Stallions, imported by him, each three years old.*

For pedigree and particulars enquire of William Rowland, Centre Street, or of

W. B. CREW,
Toronto Street.

Toronto, Jan. 15, 1855. 2-tf

STALLIONS FOR SALE.

THE Subscriber now offers for sale TWO VERY SUPERIOR STALLIONS, one will be six years old next May, he has taken nine premiums; took the first in Toronto, at the Provincial Show, 1852; the other will be four next June, he took the second in Hamilton at the Provincial Show, 1853. They were both sired by the far-famed old Clyde, who, when he was on the sod far surpassed any horse that ever came against him. Their dam is a very superior Mare. For further particulars apply to the subscriber

WM. WADDELL,
Pickering, Claremont P. O., C. W.

Dec: 16th, 1854. 1-3

FRUIT TREES, EVERGREENS, &c.

T. C. MAXWELL & BROS., ask the attention of those wishing *Trees* and *Nursery Articles* the coming Spring, to a few *Thousands* each of *Apple, Cherry, Standard* and *Dwarf Pear Trees*, and a good assortment of *Peach, Plum, Apricot*, and *Quince Trees*, and the *smaller fruits*. *All very thrifty and* HEALTHY.

25,000 Am Arbor Vitæ, two years in Nursery, fine plants for Hedges,
50,000 " " " " " nicely rooted.
10 000 Balsam Fir, 1 to 5 feet high,
30.000 Norway Spruce, 1 to 2 feet high.
1.000 Hemlock, Red Cedar, &c.
2.000 Wet Ash large and cheap, and large Horse Chesnut, &c.

The above and many other articles usually grown in the Nurseries, we offer in lots to suit purchasers CHEAP.

Digging and packing done in the best manner.

T. C. MAXWELL & BROS.

Old Castle Nurseries,
Geneva, Ontario Co., N. Y. 2-2

PURE BRED ANIMALS,

AT

PRIVATE SALE,

Mount Fordham, Westchester Co., 11 miles from City Hall, New York, by Harlem Railroad.

HAVING completed the sale of animals, as advertised in Catalogue of 1854, (excepting Short Horned bull "*Balco*" 9918), at prices highly remunerative, for which patronage I feel grateful, not only, to the public of almost every State in our Union, but to the Canadas, Cuba, and the Sandwich Islands; *I will issue about the 1st of March, a Catalogue for* 1855, of Short Horned Bulls, and Bull Calves (some of which belong to my friend, and part associate Mr. N. J. Beear) North Devon Bulls and Bull Calves, Southdown Rams, Suffolk, Berkshire, and Essex Swine, of almost all ages, and of both sex, now ready for delivery. This catalogue will be illustrated with portrai's of my Prize Animals. Most of the original animals of my breeding establishment were selected by me in England in person, and strictly in reference to quality, *in my judgment*, best adapted for the use of this country.

L. G. MORRIS.

January 30th 1855.

DAVY'S DEVON HERD BOOK.

SECOND VOLUME.

JUST PUBLISHED, and now ready for distribution at the New York State Agricultural Rooms, Albany. By enclosing B. P. Johnson (Corresponding Sec) $1.50 he will forward the book to any address desired. The liberality in registering the animals of American Breeders, giving them equal advantages with those of the location where the breed originated, deserves the good feeling, and patronage o. this country.

February, 1855.

THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VII. TORONTO, APRIL, 1855. No. 4.

Agriculture, &c.

TOWNSHIP OF HAMILTON FARMERS' CLUB.

AGRICULTURAL SOCIETIES—THEIR BENEFITS.

At a meeting of the Township of Hamilton Farmer's Club held on Saturday the 3rd Feb. 1855. Charles Bourn Esq., President in the Chair.

The subject for discussion being "The advantages that Agricultural Societies have been to this Province." The opening address was delivered by John Wade, Esq., as follows:

MR. CHAIRMAN AND GENTLEMEN:

It is universally admitted that Agriculture has made more rapid strides in advancement the last fifty years, than it did in the previous five hundred. Various causes have contributed thereto, the principle cause however, has been Education, cultivated minds applying scientific knowledge to the plodding routine practices of our ancestors, discarding what was useless and superstitious and drawing in what was useful, and all that would in any way conduce to raise it from what it was universally considered, the lowest drudgery of life, only fit for clowns and serfs to pursue, to a liberal profession requiring as much enlightened skill and knowledge as any other calling.

Modern Agriculture is indebted to the liberal sciences, such as Geology, Chemistry, Physiology, and others, for much of the extraordinary progress it has made during the last quarter of a century (for it is little more than that time since attention has been turned to these things,) establishing it upon a certain basis, by putting cause before effect. Ancient Farmers knew that a certain routine of practice would produce certain results, but the causes were totally unknown and would have remained so, if Geology had not shewn how soils were formed, if Chemistry had not analysed them to shew what elements they contained, and in combination with Physiology, shewn the reason why food given to Animals produced certain effects, and why certain breeds of Animals, would return from a given amount of food much more than others.

But however Agriculture may be indebted to the Sciences for much of her rapid progress, much less would have been attained, if the combining influence of Societies and Association had not been brought to bear upon it by making results known, breaking down prejudices and making men consent, however reluctantly, that they must either progress or retrograde.

Man by Nature is a gregarious animal, living and acting in communities, unable individually to accomplish but little more than many of the lower orders of creation, simply a subsistence, while in combination with his fellows, his powers are next to unlimited, both morally and physically. Necessity as well as inclination compels mutual protection, mutual instruction and all the blessings of social life proceed from it, and more than all, the great interests of religion can only be carried out, and enjoyed to perfection in the same way, as it is enjoined upon us in the Book of Life, not to forsake the assembling of ourselves together; and on these premises I come to the conclusion, after giving the sciences due credit for all their contributions, that little in comparison would have been attained in Agricultural improvement, if the uniting and amalgamating power had not been contributed by Associations and Societies. Various measures have been employed by Agricultural Societies to obtain the desired results of improvement, the principle however, has been offering premiums in money or medals, or other awards of merit, sometimes by employing their funds in the purchase of superior stock; but in what ever way it is done the best results have always followed.

I am not prepared, neither would it be of much profit on this occasion, to enter statistically into the History of those Societies any farther than to state, I know of none earlier than the Highland and Agricultural Society of Scotland, established about the beginning of the present Century. The Royal Society of Great Britian aud Ireland is of much more recent establishment, but though some may have been in operation for 30 or 40 years their effects have only been felt in full force for the last 10 years, in Great Britain and Ireland, during which time they have spread universally, not only as Societies for awarding prizes, but clubs for discussing the various subjects connected with rural affairs, are in active operation in every part of the Kingdom.

Twenty-five years is as far back as any successful attempt to establish a Society can be traced in our Province. In our own County the first attempt was

made about the year 1825, but after two or three years' trial failed another attempt was made in 1830, or 31, and partially succeeded. This was made before Legislative aid was afforded, the subscription was £1 per member. A small importation was made from New York State of Devon Bulls and one Durham, not probably producing much direct benefit, but indirectly paving the way for more successful attempts.

Our present County Agricultural Society was commenced in 1837, through the united efforts of the late G. Manners, Esq., our worthy Sheriff H. Ruttan, Esq., and a few others, and after plodding through many discouragements, and difficulties is still alive and prospering. Since Legislative aid has been furnished it has been much easier to keep them going, our townships have also most of them availed themselves of the act of Parliament and formed themselves into Societies, and Clubs for discussion.—But however much has been done by the County and Township Societies the thing would not have been complete without the Provincial Association. It forms a centre, to which the others connect themselves, and from the peculiar formation of our Province being a narrow strip of Country—in the widest part not extending more than 100 miles—while in length it is 700 or 800, something of this kind is required to bring the inhabitants of the various Counties together, and since this institution has been commenced great improvement both in Stock, Implements of Husbandry, Labour, Saving Machinery and indeed in every department connected with Agriculture, has taken place.

And now gentlemen having in a very imperfect manner, endeavoured to introduce this most important and momentous subject to your notice, I will leave it in your hands, knowing well the deep interest you all take in it, and also your ability to make up what I have left short, and as we are about to enter upon the preparation for holding the Grand Provincial Fair in our own County, I think a subject more apropos to the occasion could not have been chosen.

Mr. P. R. Wright said that Agricultural Societies have done good there can be no question, but that they have accomplished that amount of good which some enthusiasts claim for them, is in my opinion very doubtful. The intentions of our Societies are certainly praiseworthy and philanthropic but I can hardly believe that the amount of good they have accomplished is proportionate to their combined exertions. There are two things which materially affect the success of any undertaking, calculated to effect a change in the general usages of communities, viz: the remedy and its mode of application, and the susceptibility of the parties subjected to its operation. The question then arises, to which of these can we attribute the partial failure which has attended the efforts of Agricultural Societies, to advance the interests and stimulate the exertions of Agriculturists generally.

Let us examine briefly the career of the parent of all our Agricultural Societies—"The Highland Agricultural Society of Scotland," since its establishment in 1784. The members of this Society at its outset and even yet are principally landowners—the Nobility and Gentry of the Country, and consequently possess an influence, independent of pecuniary means, which few other Societies can command. They have combatted prejudice, with every possible weapon, examples, the aids of Science. Honor's and rewards: have been each and all brought into the field, and the war carried on for upwards of seventy years by skilful and experienced Generals, but at this day, and even in Scotland will any one have the temerity to assert that an enlightened system of Agriculture is the rule and not the exception, or charge the Society with a misdirection of its energy or misapplication of its resources. It is only (as Mr. Wade has said) within a short period that Societies are beginning to influence the Agricultural Community generally, and why? because that body is beginning to feel the necessity for a more liberal Education and acquaintance with the Sciences which so materially affect the successful cultivation of the Soil. There must be something radically wrong when it is found necessary to hold out premiums to induce a set of men to throw aside a bad management and adopt a better. Do those who offer the premiums wish to participate in the advantages which they think will be the result of a change, and do those to whom the premiums are offered think this is the case, or are the Farmers so ignorant or so prejudiced to old customs, that they are blinded to their own self interest? It is evident that those who offer the premiums expect that they will have considerable effect in directing the mind of the Farmer, to inquire into, and probably adopt such a line of practice for the future as may secure the advantages which may be naturally calculated on. Self interest is the moving principle of every man's conduct, and has a much greater influence on him than any premiums; he will only compete for them, if he feels that it will be more to his advantage by doing so, than by not doing it.

There have been no premiums held out to Manufacturers, and yet the wonderful results, which have followed the improvement in all the manufactures that have been made during the last fifty years, is the fruit of a conviction that each of the new inventions will pay all those liberally, who use them; but how different with agriculture. A continual succession of premiums have been awarded to Farmers during the last twenty years, and yet, how very little has the Agriculture of the Country been benefitted by it. This shows clearly that there is something wrong in the mode of trying to improve Agriculture, or that there is some other thing which hinders the Farmer from adopting the improvements; it may be partially owing to both. If prizes were offered for the whole of the Farmer's stock, or for the management of the whole farm, instead of for the best bullock, the best sheep, or the best dozen turnips, so that no prize be awarded but to that which on the whole shows the greatest profit, it might be an improvement on the present principle of giving prizes, and if the science of Agriculture held a more prominent place in our schools and colleges, the next generation of Farmers, would, in all probability, be an improvement on the present. On the whole, I think, that if the benefits we have derived from Societies, Clubs, and patriotic and enlightened individuals, have not been commensurate to their exertions, the fault rests mainly with the Farmers themselves. A little more philanthropy, a little less jealousy, and a little more liberality would greatly conduce to perfect the working of our Agricultural institutions, which are now fairly on the road to accomplish a complete renovation of Canada, so far as Agriculture is concerned. We, as Farmers, ought not to rest satisfied with giving to these institutions merely a pecuniary support, by paying as many unworthy members do, one dollar to speculate on the chance of gaining ten; but show we are really desirous of improving our condition, by heartily co-operating in every scheme which has a tendency to eradicate error, and supporting every man who labours for our improvement. It is now generally admitted that great good has arisen from our Agricultural Clubs; a liberal and enlightened Press has been the chief instrument in effecting this, for if publicity were not given to the proceedings of a few spirited individuals who attend the meetings, their

influence would be sadly curtailed, and I would just remark in conclusion, if Farmers now a days are satisfied with the improvement of their farms, horses, sheep and pigs, &c., and at the same time neglect their own, such men will soon find themselves lost in the race, and the post of honor occupied.

Mr. ALCORN said, it is my opinion that Agricultural Societies have been of great benefit to this country, from their commencemet to the present day. I have now been twenty years in this country during which period I have always supported these Associations, and shall continue to do them all the good I possibly can by endeavouring to induce others to become members of our Society, and if spared to see another twenty years I hope to see Agriculture improve in the same ratio as it has done for the last five years. Our having the Provincial Show here this year, I trust will be the means of bringing out a great many new members, and thereby infusing fresh blood into all our Associations.

Mr. RIDDELL said, he did not rise to make a speech but merely to correct a small error that his friends Messrs. Wade and Wright and fallen into, by saying that the first Society formed was the Highland and Agricultural Association, as he found the following in "McIntosh's History of Scotland,"—that "in 1723 some enterprising proprietors, who had introduced the culture of clover and turnips upon their personal farms, formed themselves into an Association under the title of" The Society of Improvers." In the knowledge of Agriculture in Scotland, this Society existed for upwards of twenty years. In 1784, the Highland Society was established. and procured a Royal Charter of incorporation three years after."

Mr. PRATT heartily concurred in what had been said by the former speakers, as to the benefit of Agricultural Societies, and from experience had felt some of the jealousy alluded to by Mr. Wright, and which he thought had done him no harm, as it had spurred him on to put a better class of stock in his barnyard.

Mr. BLACK had not been long a member of the Agricultural Society, but so thoroughly convinced was he of their usefulness, that he intended canvassing more amongst his neighbours for new members than ever, although some have even said that it was surely a profitable business to him, but so far from that, he had been at considerable loss of time, and expense both ; still as he thought the Society was doing good, he would do all he could for them.

Mr. CASTLE perfectly agreed with Mr. Pratt, that a little jealousy was the means in many instances, of putting better stock on our own and neighbouring Farms.

Mr. WRIGHT rose for explanation – the jealousy spoken of by Messrs. Pratt and Castles—is not jealousy at all, but emulation which was highly commendable ;—what he meant was the jealousy which prevented so many of the neighbouring farmers from becoming members of our Society, and saying there is no use in our doing so, as the Messrs. Wades and others along the front road, had been members so long, that they made up the premium lists and divided it amongst themselves.

Mr. BOURN said, I find there is only one opinion in this meeting as to the great benefits Agricultural Associations are to the Farmer, and through them to the Country ; we find they have been so in England, Scotland, and Ireland, and if carried out in their propper spirit will be so here in Canada. And now, Gentlemen, seeing, that we are to have the Grand Provincial Show in this Township next fall, I hope we shall all put our shoulders to the wheel, and carry out the object of such meetings to the fullest extent.

It was then moved by Mr Riddell. and seconded by Mr. Alcorn, that the meeting do adjourn to the first Saturday in March, to meet at Dixon's Hotel, Court House, at 1 o'clock, and that G. E. Castle, Esq., be requested to introduce the subject of "Constructing Farm Buildings, in regard to comfort and convenience."

WILLIAM RICHARDSON,
Secretary.

MR. McDOUGALL'S REPORT TO THE BUREAU OF AGRICULTURE.

Among the Documents submitted to Parliament by the Bureau of Agriculture, and ordered to be printed, we find the Report of Mr. McDougall, the proprietor of this journal, on the subject of importing Machines, Implements, &c., into this country at the public expense. It was not without reluctance that Mr. McDougall undertook the mission confided to him by the Minister of Agriculture, inasmuch as he doubted the expediency of making the Bureau or Boards of Agriculture, *importing* agencies, except in a few rare cases. But, as the Bureau was a new department, and as Mr. McD. had taken an active part in its establishment (having drawn up the various Agricultural Acts of the last Parliament,) he was very anxious that it should meet the expectations of its friends, and prove useful to the country. To dissuade from foolish or extravagant projects, is sometimes as necessary as to suggest useful ones. That the Bureau *could* be made a most valuable aid to Agricultural improvement without interfering with private enterprize, and without excessive drafts upon the public purse, no one can doubt. Its operations thus far have not been very systematic, or very promising. But it is too soon to decide against the Bureau, as it has not yet been properly organized. Let us hope that it may find proper *a head* at the next turn of the wheel. Its *first Clerk* should be a competent man, holding his office during good behaviour; and he should *do the work*. A mere politician is out of place as manager in such a department.

The friends of Agricultural improvement will see in the following report some of the suggestions and recommendations made to the Bureau by the proprietor of this journal, and can judge of their utility.

For the information of those who may fancy they detect a "job" in this report, we beg to say, that Mr. McD. has not been paid the *expenses* of his mission; and that he never expected, and would not accept anything beyond a fair allowance for that item.

REPORT OF MR. WM. M'DOUGALL TO THE MINISTER OF AGRICULTURE.

To the Honorable John Rolph,
Minister of Agriculture, &c., &c., &c.

Sir,—I received the following communication shortly after the day on which it bears date:

Bureau of Agriculture,
Quebec, 24th March, 1853.

Sir,—As I desire to make the Bureau of Agriculture useful to Canada at as early a day as possible, and to keep up that spirit of improvement which has evidently been awakened, I have taken various means to obtain information, and I now desire your services for a short time for the same purpose.

I therefore authorise you to proceed to New York, Boston, Philadelphia, and other cities of the United States, where such information is likely to be obtained, and to examine and report to me upon the various implements that have been introduced and deemed worthy of Patent; and also upon any new variety of seeds and vegetables, of which you can obtain any information, and which you may consider adapted to Canada; and generally to report upon such other articles as you may deem useful to Canadian Agriculture, with a view to action by this Department, and the Boards of Agriculture, in promoting their introduction into this Province.

I have the honour to be, Sir,
Your most obedient Servant,
(Signed) MALCOLM CAMERON,
Minister of Agriculture.

Wm. McDougal, Esquire,
Proprietor of the Canadian Agriculturist.

I have now the honour to state for your information, that upon the receipt of the above, from the late Minister of Agriculture, I proceeded to make the necessary arrangements to perform the service required of me. The New York exhibition of the Industry of all Nations, was expected to open in the month of May; and believing that I should there find all the important new inventions in Agricultural Mechanics, not yet introduced into this Province, as well as other objects to which it might be desirable to direct the attention of the Minister of Agriculture, I determined to postpone my departure for a few weeks.

I afterwards learned from the Honorable Malcolm Cameron, that it was his wish to meet me at the Crystal Palace, on the subject of my mission, and other matters pertaining to the Bureau of Agriculture. The opening of the Exhibition was delayed some weeks beyond the appointed time, and when finally opened it was understood to present for examination a portion only of those articles for which space had been appropriated. After a considerable delay from the causes mentioned, and learning from the Honorable M. Cameron that he would not be able to visit the Exhibition as he had intended, I proceeded, on the 9th of August, to execute the mission with which that gentleman had honored me.

Looking at the terms of Mr. Cameron's letter, I found that I was authorised to "examine and report upon such Implements, Seeds, Vegetables, and other articles, as I might deem useful to Canadian Agriculture, with a view to their introduction into this Province," through the agency of the Bureau and Boards of Agriculture.

Assuming that the interference, or assistance of Government, was intended to be confined to those cases in which private enterprise would not be likely to achieve the end desired, except perhaps after long delay and consequent loss to the Agriculture of the Province, I felt bound to limit this branch of my enquiries, to a comparatively small class of objects. Boston and Philadelphia were suggested as cities which might be visited with advantage, and it would have given me, personally, great pleasure to have acted upon the suggestion; but I could not learn that information on the subjects contemplated in my instructions was likely to be obtained in either of those cities, which was not equally accessible in Albany, the Crystal Palace, or other sources in New York. I did not therefore extend my investigations over so wide a territory or protract them for so long a period as the general terms of my commission might be held to warrant.

The Agricultural machines and implements of recent invention, that came under my notice, or of which I could obtain reliable information, were neither very numerous, nor, in an economic point of view, very important. The number of those which I feel warranted in recommending for importation at the public expense, is small indeed; and if my report were limited to a mere description of this class of objects it would comprise but a few pages. My observations will, therefore, be more diffuse and suggestive than I had expected to make them.

The progressive increase in the wages of labour; the rapid exhaustion of the soil, under a rude and wasteful culture, which has prevailed over this continent, and is probably incidental to all new countries; the certainty of sale for all his productions; the better price and the "quick returns" which a dense population at home, and never-glutted markets abroad, secure to the farmer, have rendered necessary as well as profitable the employment of machinery in Agriculture, of a more complicated and expensive kind than has ever been practicable at any former period. In Great Britain the same necessity has grown up, though from somewhat different causes.

The astonishment created among the farmers of that country by the successful operation of the American Reaper at the World's Fair, in 1851, which was in no degree lessened by the discovery, that this identical Reaper was the invention of Mr. Ogle, of Rennington, near Alnwick, as far back as 1822,* while it showed the existence of a blind unreasoning prejudice in the Agricultural mind, against the most valuable offerings of mechanical ingenuity, indicated also that this prejudice was fast melting away before the convincing logic of necessity. The same instinctive hostility to new inventions and new processes in agriculture prevails in Canada among a large class of farmers. But every year extends the conquest of innovation, and though we are still behind our inventive and enterprising neighbours in the use of Agricultural Machinery, I firmly believe we shall soon overtake them—nay that we shall surpass them in the *superior construction, and more economical* use of such implements and machines as are adapted to our wants.

During the last two or three years, manufactories of farmer's tools and implements have been established in all the principal towns and cities of Upper Canada. So great is the demand for improved machinery that even American manufacturers have set up branch establishments in Canada, with very profitable results.

Labour and materials being much cheaper here than in the adjoining States, *enterprise* seems all that is necessary to produce, *at home*, every implement that is required. This favourable improvement in the mechanics of Agriculture, (I speak more particularly of Upper Canada) is undoubtedly attributa-

ble to the influence of the Societies, Associations, and Boards of Agriculture, which the Legislature has so wisely encouraged, and so liberally aided. The provisions of the consolidated Bill of last session, to prevent abuse in the expenditure of the public grants, and to secure the collection and publication of the Agricultural statistics of the country, in an authentic form, will, as experience already proves, produce the desired result and leave but little for the direct interference of the Government beyond the executive administration of the law.

With such views of the present condition of our Agriculture, and the efficiency of the means already provided for ensuring its progressive improvement you will not expect me to recommend a competition between the Bureau, or Boards of Agriculture, and private individuals, in the importation of implements, seeds and animals, from other countries. That there are a few cases in which the special and direct aid of the Government may be legitimately and usefully interposed, is admitted, but as the result of my enquiries, I can only mention two or three which at present seem to me to deserve your attention as belonging to this class

Flax machinery &c. The introduction of improved machinery for dressing and preparing flax is necessary, if its cultivation is to be extended. This is one of the cases which is thought to need the aid of the Bureau, and I shall therefore offer a few remarks upon it.

It may well be doubted, if the culture of flax is as important to Canada, in an economic view, as it is fashionable to represent it. As a general rule, farmers will cultivate those crops suited to their soil and circumstances. At all events, it is not to be supposed that the intelligent and wealthy class, now not a small one, will long neglect those crops which, upon the whole, will yield the most profitable returns. There are in this country no legal restrictions, or impediments to be removed, no obstacles to be overcome, except those which nature has imposed. The Canadian farmer may freely choose from the world's seed store; he may range over the whole vegetable kingdom and make his selections without let or hindrance. For what purpose then should Government interfere? Not to divert farmers from the cultivation of those crops which they have found adapted to their soil, climate, and market facilities, and to build up, by means of bounties, or premiums, an artificial, hot-house system. Such interference would in my opinion, be injurious to the best interests of our farmers and the country. To encourage, to stimulate, to diffuse information, and by means of societies and Boards of Agriculture among the farmers themselves, to promote general improvement, is the duty of Government. But special action must be limited to a very few cases, and such as lie beyond the reach of common means, or injury, and not benefit may be the result.

The more general cultivation of flax might not be productive of injury to the soil or pocket of the Canadian farmer; but it may safely be affirmed that neither the one nor the other, has received much benefit hitherto from its cultivation for textile purposes. The experiment has not been confined to a few cases, nor to a single township. I have published an Agricultural Journal for the last six or seven years in Upper Canada, and during that period, as well as previously, heard and read and published many statements and opinions on this subject. But I am not aware that it has ever been demonstrated by actual experiment in Upper Canada, that flax, as a field crop is more beneficial or more profitable than the poorest of those which form the common rotation. In several cases coming under my observation, its cultivation, except for seed, and mere domestic purposes, has been abandoned after a short trial. But it is said that the unprofitableness of the flax crop arises from the small quantity grown in any one locality, and the want of suitable machinery to prepare it for market. The first reason may be merged in the second. If the machinery for steeping or steaming and dressing the straw as it comes from the field, were set up in any county, and a sufficient price offered for the raw material, producers in abundance would undoubtedly be found. It is true that farmers, generally, are not friendly to this crop, on account of its supposed deteriorating effect upon the soil. Science has recently endeavoured to show that this is a mistaken notion—a prejudice; but when the conclusions of chemical analysis, and of two thousand years experience, conflict on a point of this kind, we ought rather, I think, to suspect some blunder in the laboratory than in the field. The experience of Roman cultivators, nineteen hundred years ago, taught them that flax "burned the land" (*Virgil's Georgics I.* 77). A distinguished modern writer on Agriculture informs us, that—"The Premiums given by the Legislature of England to force the cultivation of flax, have had very little effect, it being one of the most *exhausting* crops, when allowed to ripen its seed, and its culture being found to be much less profitable than corn," (*Farmers' Encyclopedia*, article, *Flax.*) But as all crops and especially cereals "exhaust" the land, and compel the cultivator to return in the shape of manure the exhausted elements, if he wishes to prevent deterioration, this objection to flax is not peculiar or insuperable; it resolves itself, after all, into the question—Will it pay?

Let it be shown that the expense of growing flax and keeping up the fertility of the soil will be met by the profits, and that the margin of profits will be larger than in the case of wheat, oats or pease, and it will soon take its place in rotation with these crops. We may therefore enquire into the alleged cause of its present unprofitableness, without stopping to reconcile the conflicting testimony of chemistry and experience.

Professor Wilson, the English Commissioner to the New York Exhibition, whose acquaintance I had the good fortune to make at the Crystal Palace, informed me that England alone imported 100,000 tons of the raw material. He expressed a very confident belief, that flax could be grown profitably in the United States and Canada, for exportation to England; but his data were somewhat vague and unsatisfactory. (†) He very kindly presented me some recent publications on the subject. The information derived from these sources, though interesting and useful, is not so conclusive or satisfactory in its bearing upon the question I wish to submit for your consideration, as to warrant its introduction at any length in this report.

If it be admitted that there is a *market* in Great Britain for all the flax fibre we are likely, under any circumstances, to produce for exportation, and that the only obstacle to the cultivation of flax for such a purpose is the want of suitable machinery for pulling, dressing, and preparing it on a large scale, the question arises—can such machinery be had, and ought Government to aid in procuring it?

Your predecessor, the Honorable M. Cameron, having sent a commissioner to Europe for the purpose of making special enquiries on the subject, I am bound to treat the second branch of the question, as already answered, in the affirmative. The doubts suggested

as to the importance of flax culture *at all* in this country, are also partly set aside by the same fact; but as these doubts hinge on the single question of profit, the discovery of efficient machinery by which the fibre can be prepared for market at such a cost as to leave an ample profit to the producer will, of course, show them to be unfounded. Nevertheless, I beg most respectfully to call your attention to the economic view of the question, before you decide upon more active measures, or a larger expenditure.

In England, and especially in Ireland, every branch of flax manufacture has been made the subject of scientific investigation, with a view to its improvement; and we may therefore presume that the most economic processes, and the best machinery will be found in use there. Mr. Kirkwood has no doubt obtained the latest and most reliable information from that quarter; but as the Crystal Palace contains some newly invented machinery for dressing flax, which may not have been seen by him, it is proper that I should submit for your information a short account of it.

Chichester's Flax Machines.—These were the only flax machines in the Exhibition, at the period of my visit. The machine Arcade was still unfinished, and may articles for which space had been secured, had not reached the Palace. Clemmon's Flax machine, or dresser, is a new machine highly spoken of by some but it was not in the Exhibition, nor was I able to learn much respecting it. Chichester's Machines consist of a Puller, a Brake, and a Dresser. The former, said to be ingeniously constructed, was not in the Exhibition. Professor Wilson, however, had seen it, and entertained a very sanguine opinion of its efficiency. One great obstacle to the growth of flax on a large scale, is the expense of pulling or harvesting. At present the pulling is done by hand, and unless machinery can be substituted for hand labour in the field, as well as in the manufactory, this expense will subtract largely from the farmer's profit. It has been suggested that the common (as it may now be designated) mowing machine will answer this purpose. If so, an important point is gained; or, if Mr. Chichester's Puller be found, upon trial, to fulfil the requisite conditions (and many persons believe it will) the difficulty will be overcome. His Brake is not unlike a common Fanning Mill in appearance. Its machinery consists of two horizontal, corrugated cylinders, about twenty inches in diameter, and working together. Their surfaces are composed of ribs or plates of iron, every alternate plate being adjusted on spiral springs so as to yield to pressure, while the others are fixed firmly on the cylinder. As they revolve, each yielding rib in one cylinder is opposed to the fixed rib in the other. The flax is fed end-wise, at the side of the machine, and passes between the cylinders, being broken by the pressure of their ribbed surfaces.

The wood is thus broken and separated from the fibre, the former falling down, and the latter passing out at the other side of the machine, in a fit state to be subjected to the Dresser.

The Dresser is similar in appearance to the Brake, but its cylinders are of a conical shape, and composed of wood. Each cylinder is composed of four large spiral blades of wood, the blades of one being opposite the spaces between the blades of the other. The fibre from the Brake is drawn in by these revolving cones. The blades strike it first on one side and then on the other, breaking out the remaining wood or shives, and deliver the fibre, unbroken and free from impurities. A specimen of flax, dressed by these machines, presenting a long, fine, white fibre, was stated to be worth $400 to $500 per ton in New York market. The two machines cost about £150, and may be drawn by two horses. Four men are required to attend them. It is said they will dress a ton of rotted or steeped straw, per day, which will yield from 400 to 500 lbs. of fibre.

Some of these figures are evidently exaggerated, for if Professor Wilson be a good authority, the value of the fibre in England, prepared by the latest and most approved process, does not exceed, for the best quality, £70 sterling per ton (see his lecture on Flax, delivered before the New York State Agricultural Society September, 1853, page 38,) and he gives the ordinary price at £40 per ton, (page 47). If, as alleged, flax fibre be worth $500 per ton in New York, (see N.Y. *Tribune* of September the 28th, 1853,) Professor Wilson will hardly persuade the American producer to send it to the English market for $200 per ton. The question of profit and loss to the Canadian producer cannot be satisfactorily determined, unless we obtain correct data, on three points at least, viz., the cost of growing and pulling the crop; the cost of steeping and dressing the fibre, and the market value of the product. Mr. Kirkwood, I presume, has obtained accurate information on these points, especially the two last. I need not, therefore, attempt to reconcile the apparently conflicting statements above mentioned.

The cost of working Chichester's machine in the State of New York is thus stated by a New York journal: "The two machines—Brake and Dresser—will dress one ton per day of the rotted or steeped stalk or straw, yielding 375 to 400 lbs, according to the quality of the material, of soft and very serviceable line or fibre. This, supposing the ton of rotted or steeped straw to be worth $12, the labour $4, the power $1, the use and wear of machinery &c., $3 more, and $5 per day for contingencies, would give $25 as the net cost of say 400 lbs of line or dressed flax, worth certainly not less than $50, giving a profit of $25 per day to the runner or owner."

Buchanan's improved apparatus for steeping the straw, is according to Professor Wilson, the best hitherto employed in Great Britain, and I believe it is not claimed that any better plan has been discovered, or put into operation on this side of the Atlantic.

If you should determine to introduce, or to aid the introduction into Canada, of Buchanan's, or any other improved steeping apparatus, additional machinery will, I apprehend, be necessary to effect the mechanical separation of the fibre from the other parts of the plant. It may be that Chichester's Brake and Dresser are the best yet contrived for that purpose. I therefore respectfully submit the foregoing statements and suggestions for your consideration.

Drain Tile Machines.—There may be reason to doubt the advantages to the Agriculture of this Province, of a more extended culture of flax; but it would be difficult to suggest a reasonable objection to the more general adoption of thorough drainage.

It is somewhat singular that so few farmers, even of those recently from the "Old Country" where its benefits have been so thoroughly tested, have attempted thorough draining in Canada. It seems to be a common opinion that in this country, *surface* draining is sufficient, and that the expense of under-draining would be altogether disproportioned to its advantages. But if the principles on which the operation is based have been correctly explained, there is no reason to suppose that under-draining will prove less advantageous to the soil, or less remunerative to the pockets of Canadian Farmers, than to those of their neighbours in the State of New York. Under-draining on the English system is now extensively prac-

ticed in the neighbourhood of Geneva, Albany, and in New York, and according to the testimony of farmers with whom I conversed personally, the results have fully justified the expenditure. Professor Johnson, of Durham College, England, in a work entitled the Elements of Agricultural Chemistry and Geology, a new edition of which has just been issued from the press, thus sums up the advantages of thorough drainage:—

1. Stiff soils are more easily and more cheaply worked.

2. Lime and manure have more effect and go further.

3 Seed time and harvest are earlier and more sure.

4 Larger crops are reaped and are of a better quality.

5 Valuable crops of wheat and turnips are made to grow where scanty crops of oats were formerly the chief return.

6 Naked fallows are rendered less necessary, and more profitable rotations can be introduced.

7. The climate is improved, and rendered not only more suited to the growth of crops, but more favorable to the health of man and other animals.

A system capable of conferring such advantages as these, obviously merits the attention of every Agriculturalist, and ought not to be overlooked even by Government. It does not appear that these advantages are limited to any particular district, soil, or country. They depend upon conditions common to all. It is true that the under-draining is more needed and will produce greater results on some soils than on others. The question may therefore be asked, whether the soils on which it produces its greatest effects are to be found in Canada. I believe both theory and practice answer in the affirmative, and that the largest and, agriculturally speaking, the best portion of Upper Canada is composed of such soils. The stiff tenacious clays of some districts in England, are not found in Canada. The climate of the Agricultural parts of the British Islands is also more equable and moist than ours, and for these and other reasons it has been thought that under-draining was not so necessary here. But there are some evils to which the Canadian Farmer is exposed, for which under-draining is the only remedy yet discovered, that the English farmer is in a great degree exempt from.

Our growing season is shorter and droughts are more frequent and more severe. In many parts of Upper Canada, and especially on low lands, the weather of last spring proved fatal to the farmer's hopes. His crops could not be sown at the proper period, nor for weeks after it, and as dry weather succeeded wet, his harvest completely failed. Now, if under-draining will free the land of surplus water and fit it for the plough much earlier than would be practicable by any other means, the evil of a wet spring, so common in Canada, could be greatly mitigated; and, secondly, if the effect of the drain be to create a deeper seed-bed, thereby allowing the roots of plants to descend in search of food and moisture beyond the evaporating influence of the sun, much of the loss occasioned by excessive droughts of summer would undoubtedly be prevented. And thirdly, it has been found in the State of New York, that fall and spring frosts, so injurious to wheat, are comparatively innocuous on well drained lands. In that State upon soils similar to ours, the benefits of drainage have been very thoroughly tested. It was supposed, before trial, that however beneficial the system might be for the stiff clays, and under the moist atmosphere of England, it would prove of little value in that State under ordinary circumstances. But experience has established a different conclusion. The circumstances of the farmer in New York State, as respects soil, climate, taxation, markets, &c., are so similar to those of his Canadian neighbour, that I shall assume their identity for all the purposes of this question.

What has been found good for one in a case like this, can hardly prove hurtful to the other.

The question of cost meets us on the threshold of this improvement, as on that of every other. Indeed, in this enquiry, it is almost the only one that requires to be considered. It involves the chief difficulty.

Every intel igent farmer in the Province, either is or may be convinced that under-draining would ameliorate his soil, and increase his productions; but he asks, Will it pay? Unless a cheap system can be devised, cheaper than any now within the farmer's reach, this question for some time to come, must remain without a satisfactory answer. It has been found in Great Britain and the United States, that *Pipe Drain Tiles* are the cheapest and best material for the construction of under-drains; and there seems no reason to doubt, that if suitable machines were introduced, and the manufacture conducted on a proper scale, they would also be found the best and cheapest for Canada.

The Upper Canada Board of Agriculture, as you are aware, have already had the subject of Drain Tile manufacture under their consideration, and have offered a premium to the person, who shall first put into successful operation in Upper Canada. a good Tile Machine.‡

At the suggestion of Professor Buckland, Secretary of the Board, I called upon J. Delafield, Esq., of Geneva, New York, the gentleman, who first introduced an efficient Tile Machine into that State, and obtained from him much useful information on that and other subjects. Mr. Delafield§ is President of the Agricultural College recently chartered by the New York State Legislature, which is about to commence its operations under most favourable auspices. In 1848 Mr. Delafield imported from England, at his own expense, one of Scragg's Tile Machines, and placed it in the hands of a Potter near Geneva, upon such terms as induced him to undertake the manufacture of drain tiles at a reasonable price. Mr. Delafield himself became a customer for a large quantity, and thus set an example to his neighbours. I saw this machine in operation, and was informed by the proprietor, that although attempts had been made to copy and improve it, yet he preferred the imported machine, and had ordered a new one to be constructed exactly like it.

The machine costs about £50, is very simple in its construction, and not liable to get out of order. The clay is the same as that ordinarily used by common potters, and is prepared by a Pug Mill in the usual way. It is then put into the machine, and by the motion of a crank, turned by one man, is forced through moulds, which give the desired shape to the tiles. With ordinary attendance, about 3,000 two inch pipe tiles are turned out daily. The machine is capable of producing a much larger quantity, but 3,000 is the limit, as it is now worked. I visited a tile factory at Albany, in which a machine constructed on a different plan, (also imported from England) is used. But judging from the appearance of the tiles, and from the opinions of gentlemen who had taken an interest in the subject, I believe the machine at Waterloo, near Geneva, is to be preferred.

Professor Wilson gave me the names of the principal machines now used in England, and he mentions Scragg's as one of the best.

[The engraving of Scragg's Tile Machine, and description of its operation, which appears in the Parliamentary documents, was published in the last volume of the *Agriculturist.* It is not necessary to repeat it here.]

Before the introduction of this machine. Drain Tiles cost Mr. Delafield and others in Seneca County from $20 to $25 per thousand. They are *now* produced for $9 per thousand. I obtained the following particulars of the expense of under draining in the neighbourhood of Geneva, both before and after the introduction of the Tile Machine.

Before the Tile Machine was put in operation, the cost of thorough draining per acre, with drains 33 feet apart, which would require 91 rods of drain, was stated by Mr. Delafield, in an elaborate Report to the State Agricultural Society, as follows:—

Tile, small size, 20 cents per rod....	$18.20
Cutting trench, laying, &c., 18 cents.	16.38
Cost per acre.....	$34.58

Or about 38 cents per rod.

The cost of making a common stone drain, the stone being on the field to be drained, he stated as follows:—

Man and team per day, hauling enough for about five rods.....	$1.50
Cost of laying, at 6 cents per rod....	30
Cost of trench, at 18 cents "	90
Cost of 5 rods stone drain..	$2.70

Or 54 cents per rod. shewing a difference of 16 cents per rod in favour of the tiles, even when manufactured by hand. An acre with drains 33 feet apart, requires about 1,320 twelve inch (in length) tiles.

The present cost, Mr. Delafield informed me, is about 30 cents per rod; the tiles costing $9 per thousand at the manufactory. Mr. John Johnston, an intelligent Scotch farmer, whose land adjoins Mr. Delafield's, has laid down upwards *of* 16 *miles* of tile drainage. He was the first to introduce the system practically into the State, and it was at his suggestion, and in consequence of his success, Mr. Delafield took up the subject with so much zeal and liberality. In 1851, Mr Johnston presented a most interesting Report of his experiments to the State Agricultural Society. I shall copy a few sentences on the points of most importance.

Cost.—"I find that drains constructed with two-inch tiles can be finished complete for 30 cents a rod." His farm is five miles distant from the manufactory.

Depth of Drain.—"The rule adopted by me is first to select a good outlet for the water, then to dig a ditch so deep as to find a hard bottom on which to lay the tile. On my farm this is generally found at two-and-a-half to three feet in depth."

Distance Apart.—"The distance between the drains is regulated by the character of the soil. If it is open or porous, drains three or four rods apart may drain it, while on tenacious soils two rods apart may be needed." Mr. Delafield expressed his opinion that Mr. Johnston had laid his drains unnecessarily close. He thought that about 4 rods was a proper distance on such soils as Mr. Johnston's and his own. This, at 30 cents per rod, would make the cost of drainage about $13.50 per acre.

Advantages.—"About six years ago I began to drain a field on the boundary line between Mr. Delafield and myself. The field contained about 20 acres, of which six were then subject to drainage. The 6 acres had seldom given a remunerative crop, even of grass. After draining the 6 acres, the whole field was ploughed and prepared for corn, 2 acres being reserved for potatoes.

"The usual care was given to the cultivation of the whole crop, which, during its growth, shewed a marked difference between the drained and the undrained portions of the field. The yield of this field proved to be the largest ever raised, I believe, in the country—the product being eighty-three bushels and over per acre. This field attracted much attention from my neighbours, and others from more distant places. It was examined at the time of draining, and after ploughing both the first and second seasons, the parties being able to walk on the drained parts without any undue moisture, while all the other land in the neighbourhood was muddy, and as before stated, the corn was found to be far more vigorous in the plant and abundant in the grain.

"In the following season I cropped it with barley, and found the drained land produced altogether the finest plant and the best yield of grain. When the barley was harvested I prepared the field and cropped it with wheat.

"The difference again was so striking and distinct in favour of the drained land, that I felt the propriety of thoroughly draining the whole field, which was completed without loss of time, at a cost of $22 per acre for the whole field. I then ploughed and sowed with barley, and seeded with clover. Of the latter I cut a very large crop last summer, and not one square foot of the clover froze out; and now I can rely on a good crop of anything I may sow or plant. Encouraged by a considerable increase of product derived from draining, I determined to extend the system as rapidly as convenience and circumstances would permit." After detailing the results in other fields, he says:—"I have forty acres of wheat now growing on thorough drained land. The improvements in my fields and crops have been great and satisfactory, giving me fine crops of wheat where formerly it froze out. So well satisfied am I of the advantages derived from the system, that I have drained six acres this fall, and shall continue to drain while I have a wet spot on my farm."

Reimbursement of Outlay.—Mr. Johnston gives some figures as to the cost of land, expense of draining, &c., and concludes with this important statement:—"On such land as I have, if I get two crops of wheat from my drained land, I am paid by the excess of crop so as to cover all costs of draining, and sometimes more than paid by one crop, that is by the excess of crop beyond what it would have been had the land remained undrained."

I should observe that the land in question is a rich clay ridge. The soil of the locality rests upon a fossiliferous blue slate, called the Marcellus slate, which overlies the Seneca limestone. This slate is readily decomposed, and forms a tenacious clay. The soil of the county of Seneca generally, according to the State survey, is a drift deposit.

The physical character of the diluvium, and the direction of the drift, lead to the inference that the soil is not derived from the wear or disentegration of the rocks that underlie it, but from the gypseous group which occupy the counties to the north and bordering Lake Ontario.

The Geological Survey of Upper Canada has, thus far been too general and desultory to afford much aid to the Agriculturist in determining accurately the origin and character of his soils; but their similarity to those on which draining has been found profitable in the United States, may be assumed from qualities

and characteristics sufficiently obvious for common apprehension.

In the Geological Report of 1850, the soil of Western Canada is spoken of in general terms as a deposit of loose detrital material, consisting of clay, sand, gravel, &c., which covers to a great depth the old strata, except in a few places.

* See the London "Mechanic's Magazine" for November, 1825, which contains an exact description of M'Cormick's Reaper in all essential points.

† Since this was written, Professor Wilson delivered a lecture on flax before the Agricultural Association of Lower Canada. The published report contains much interesting information but no figures by which the expense of growing and preparing flax for exportation can be calculated with any certainty, nor is the commercial value of the fibre, in England definitely stated. In his Lecture before the New York State Agricultural Society, at Saratoga, (published by Saxton, New York,) he mentions three pieces. "The samples produced by Watt's method," he tells us, "varied from £56 to £70 per ton." The value of the dressed fibre imported into England is stated in another part of his Lecture, at £40 per ton.—Donlan's Prospectus of 1852and other authorities state the value of the fibre at £32 per ton.

‡ At the late meeting of the Agricultural Association at Hamilton, a Mr. Charnock exhibited the model of a new machine, which he claims to have invented, but it has not yet been tested in Canada.

§ I have heard with much regret, that this gentleman, whose enterprise and intelligence placed him in the first rank of his profession, died shortly after my visit.

(*To be continued.*)

SHEEP HUSBANDRY—BEST AUTHORS.

Our attention has been called to the subject of SHEEP, by a correspondent and subscriber, who is about to engage "more extensively in the wool-growing business," and who desires to be "informed of the best authorities on the management of sheep, especially the two principal English breeds—New Leicesters and South Downs." He also suggests that we should "devote more space in the *Agriculturist* to sheep, the most *profitable* stock the Canadian Farmer can raise."

We thank our friend for his suggestion; and assure him it will not be lost upon us. In our last volume, we gave a very full history of the various breeds of Cattle; and intended to give a similar account of the HORSE, in the present volume. We have not been able as yet to procure the necessary illustrations; but have ordered them from New York. In the meantime, we shall turn attention to that other equally useful, if not equally "noble" animal, the SHEEP.

To point out the the "best authorities" on sheep husbandry, when there are so many, would be rather a difficult task. The English authors are the most scientific; and in regard to the management of the English breeds, probably the most reliable. But the climate, seasons, pastures, &c., of this country, differ so greatly from those of the British Isles, that English works must be read and followed with some caution. American authors are, for the most part mere compilers. They borrow largely, often without acknowledgement, from English and other European writers; but as the climate and other conditions in the United States, especially the more Northern, are very similar to ours, these compilations, when judiciously made, are best adapted to the wants of the Canadian wool-grower. "Youatt, on Sheep," is a standard English work. It has been reprinted by Saxton, N.Y., with additions on management of Sheep in the United States, (price 75c.)

Morrell's "American Shepherd," is a very good compilation of Youatt, Blacklock, Spooner, and other European authorities. The compiler's remarks are also valuable, as he is a practical man, and a large flock-master in the State of New York. Randall's "Sheep Husbandry," (price $1.25) "Canfield on Sheep," (price $1), "The Shepherd's Own Book," (price $2), are recent publications by Saxton, New York. The latter is perhaps the best book for all purposes containing the substance of Youatt and Randall, with Notes by Skinner. Any of these books can be ordered through us, or of the publisher direct.

THE SHEEP—SOUTH DOWN—No. 1.

[We expected to have given an engraving of Col. L. G. Morris' South Down Ram, "Young York," at the head of this article, but it did not arrive in time. It will appear in our next.]

At the suggestion of a correspondent, we shall give in successive numbers short papers on Sheep husbandry, compiled from standard authorities, and a history of the principal breeds which have been found most profitable in this country.

We begin our series of papers by a brief notice of the South Down:—

The Sheep of Great Britain for a long time have been classed into *middle-wooled*, and *long-wooled*. The *short-wools*, properly speaking, now employed in English cloth manufactures, are of foreign growth.

The middle-wooled breeds comprise the South Down, Norfolk, Dorset, Cheviot, and some others, which are inferior, however, to these.

Confessedly, on all hands, at the head of the middle-wooled varieties, stands the South Down. It already occupies a large share of the attention of American and Canadian breeders.

The original as well as present location of a large proportion of this breed is on the South Downs (from whence the name of the breed is derived), a long range of chalky hills, diverging from the great chalky stratum which intersects the kingdom from Norfolk to Dorchester. They may be considered as occupying a space of more than sixty miles in length, and about five or six in breadth, consisting

of a succession of open downs, with very few enclosures. On these downs a certain breed of sheep has been cultivated for many centuries, in greater perfection than elsewhere; and hence have sprung those successive colonies, which have found their way to every part of the kingdom, and materially benefitted the breed of short-wooled sheep wherever they have gone.

The perfection of carcase which the South Down at present exhibits, is owing to the skill of that distinguished sheep-breeder, Mr. John Ellman. He says, "This breed was formerly of a small size, and far from possessing a good shape, being long and thin in the neck, high on the shoulders, low behind, high on the loins, down on the rumps, the tail set on very low, perpendicular from the hip bones, sharp on the back, the ribs flat, not bowing, narrow in the fore-quarters, but good in the leg, although having big bone."

The improvement effected by Mr. Ellman, was not from any admixture of foreign blood, "for even the cross with the Leicester," says Youatt, "was a failure, and the promised advantages to be derived from the Merinos were delusive." It resulted, mainly, from the practice of the true principles of breeding: a system of choice selection from male and female. The introduction of turnip husbandry was another very important agent, which essentially promoted thrift and size, and an early development of form. "They are now," says Mr. Ellman, "much improved both in shape and constitution. They are smaller in bone, equally hardy, with a greater disposition to fatten, and much heavier in carcase when fat. They used seldom to fatten until they were four years old; but it would now be a rare sight to see a pen of South Down wethers at market more than two years old, and many are killed before they reach that age."

The following description of a perfect South Down, from the pen of Mr. Ellman, will be valuable to the Canadian breeder, as well as guard the ignorant from imposition:—

"The head small and hornless; the face speckled or grey, and neither too long nor too short. The lips thin, and the space between the nose and the eyes narrow. The underjaw, or chap, fine and thin; the ears tolerably wide, and the forehead well covered with wool, and the whole space between the ears also.

"The eye full and bright, but not prominent. The orbits of the eye, the eye-cap, or bone, not too projecting.

"The neck of a medium length, thin towards the head, but enlarging towards the shoulders where it should be broad and high, and straight in its whole course above and below. The breast should be wide, deep, and projecting forwards between the forelegs, indicating a good constitution, and a disposition to thrive. Corresponding with this, the shoulders should be on a level with the back, and not too wide above; they should bow outward from the top to the breast, indicating a springing rib beneath, and leaving room for it.

"The ribs coming out horizontally from the spine, and extending far backward, and the last rib projecting more than the others; the back flat from the shoulders to the setting on of the tail; the loin broad and flat; the rump long and broad, and the tail set on high and nearly on a level with the spine. The hips wide; the space between them and the last rib on either side as narrow as possible, and the ribs, generally, presenting a circular form like a barrel.

"The belly as straight as the back.

"The legs neither too long nor too short. The fore-legs straight from the breast to the foot; not bending inward at the knee, and standing far apart both before and behind; the hocks having a direction rather outward, and the twist, or the meeting of the thighs behind, being particularly full; the bones fine, yet having no appearance of weakness, and of a speckled or dark colour.

"The belly well defended with wool, and the wool coming down before and behind to the knee, and to the hock; the wool short, close, curled, and fine, and free from spiry projecting fibres."

This breed will sustain themselves with occasional short keep, and endure hard stocking equal to any other; and their early maturity is but little inferior to the new Leicesters, the flesh finely grained, and of peculiarly good flavour. Blacklock says "it is unadapted for bleak situations, but sufficiently hardy and active for a low country."

The average weight is from 15 to 18 lbs. a quarter; but on the authority of Mr. Youatt, Mr. Grantham exhibited a pen of three sheep at Smithfield in 1834, one of them weighing 283 lbs.; the second 286 lbs.; and the third 294 lbs.

The average weight of the fleece was, in 1800, 2 lbs.; and the staple at that time very short: it has now increased to 3 lbs.; and the lowland South Down, from better keep, shears from 3½ to 4 lbs. The staple has increased from 1½ to 2 inches in length to from 3 to 4 inches. A picklock fibre is the 1-600th part of an inch in diameter, and the serrations 2080 to an inch.

A serious objection has always existed against English South Down wools, from the brittleness of the fibre, originating in the chalky nature of the soil on which a large proportion of this breed are kept. Formerly much of this wool was employed in the manufacture of army cloths; but its changed character, within a few years, has also changed its uses, and it is now converted into flannels, baizes, and worsted goods of almost all descriptions. The paucity of serrations will prevent its uses beyond combing purposes, for which it is now highly prized.

There are no sheep more healthy than the South Downs. They seldom suffer from the hydatid on the brain, nor are they as much exposed to rot as the sheep in many other districts. Their general health is supposed to be much connected with *frequent change of food*, and their daily journeys to and from the fold.

The South Downs have borne witness to a mania for their possession, like the Merinos and Saxons in the United States. In 1800, two of Mr. Ellman's rams were sold to the Emperor of Russia, in order to try the effect of a cross on the Northern sheep, for one hundred and fifty guineas each. When Mr. Ellman retired from public life, in 1829, his flock

was sold by auction at the following rates: 770 ewes $13.64 each; 320 lambs, $7.92 each; 36 rams, $112.50 each; and his best ram for $292.50. This valuable breed continue to sustain the high character they acquired through Mr. Ellman's efforts, and amongst the purest and best flocks, very high prices are demanded and obtained for breeders.

They have been found to thrive well in Canada; and by many are preferred to the Leicesters. We shall notice the latter breed in our next number.

PARTURITION, OR LAMBING.

As the lambing season will soon be at hand, it may be of advantage to some of our readers to offer a few practical suggestions on this subject in the present number.

The usual period of gestation with the ewe is five months, or an average of 152 days.

The proper time for parturition must be determined by circumstances, of which climate and locality are the most prominent, and these the flockmaster must steadily keep in view. The month generally selected in the Northern and Middle States is May. In Canada we frequently see lambs in April; but the vicissitudes of the climate forbid an earlier period than May, unless in instances where buildings are provided for shelter, the expense of which is greater than the majority of farmers are willing to incur.

The ewes during pregnancy should be disturbed as little as possible, and every attention paid to the quantity and quality of their food. Ewes, however, should not be kept *fat* at this stage; indeed it is injurious, as it predisposes them sometimes to abortion; but what is usually termed "good store condition" should be maintained through the whole period of gestation. Neither should ewes be exposed to storms and cold during the winter and early spring months, but thoroughly protected from both. We cannot expect from any domestic animal a healthy offspring, in our rigorous climate, if the dam has been permitted to suffer the hardships of cold and starvation; therefore it will be wise if the sheep husbandman always hold up to view the apothegm, "so the dam, so the offspring."

The field chosen for the ewes to fold should be dry, free from stumps, open ditches, and possess as level a surface as possible. In little hollows ewes are liable to be cast, which is caused by lazily stretching themselves in sunny weather, when in a lying posture. In this situation they will often be found flat on their backs, and violently kicking the air without the power of recovery, until aided; and if unseen by the shepherd, death will follow sometimes in a few hours. But perhaps, no field affords that smoothness of surface to prevent these too often fatal occurrences, and therefore the duty devolves upon the shepherd of passing leisurely over every part of the field, several times during the day, to guard against them. But this duty must not be delayed until some of the ewes have dropped their lambs—he must commence his career of watchfulness at least ten days before, for it is very common with ewes that are in overgood condition to be found in this perilous situation some days before their time.

Other duties obligatory upon the shepherd are lucidly set forth by Mr. Youatt, as follows:—

"The lamber should have with him his lamb-crook; a bottle of milk—ewes' milk if possible, and carried in his bosom or in an inside pocket, that it may be kept warm; some cords to tie the legs of the ewes that he may have occasion to assist or examine; a little pot of grease or oil, to lubricate his hand, if he should have occasion to introduce it into the womb of any of the ewes; a sharp knife, with a round or rather curved extremity, should it be necessary to remove the lamb piece-meal from the mother; a piece of stout polished iron rod, of the size of a goose quill, twelve inches in length, and rounded at one end, somewhat like a button hook, in order to remove from the womb a dead or divided fœtus; a small quantity of cordial, consisting of equal parts of brandy and sweet spirit of nitre; and a strong infusion of ergot of rye.

"The period of lambing having commenced, the attention of the lamber should be increased. He should carefully observe every ewe that appears to be in labour. While she walks about and does not exhibit any extraordinary degree of suffering, he should not interfere; nor should he do so if she rises when he approaches, and walks away, unless her labour has been protracted twenty hours or more. He should not be in haste to render his assistance, although she should be continually lying down and getting up again, and showing more impatience or irritability than actual pain; but if her strength appears to be declining, his immediate aid is required. If he has to drive her to the fold or pound, it should be as gently as possible, or he should drive some others with her, in order that she may not be frightened by being alone selected. The early interference of the lamber is always prejudicial, and very frequently fatal. Nature, in the course of twenty or twenty-four hours, will, in the great majority of cases, accomplish that which cannot be hurried on by art without extreme danger.

"The state of the weather will cause a very considerable difference in the duration of the labour. When the weather is cold and dry, and especially if the situation is somewhat exposed, the progress of the labour will be slow—the throes will be comparatively weak and ineffectual, and the ewe may and should be left a considerable time before mechanical assistance is rendered. When, however, the weather is warm, and especially if at the same time, it is moist, the throes will ba violent, and the strength of the sufferer will be very rapidly wasted; there will

be a dangerous tendency to inflammation, and the aid of the lamber is speedily required. Except under these circumstances, no motive of curiosity, no desire to know how the affair is going on, should induce the lamber to interfere while the throes are natural and the strength continues, unless it is evident, without handling the ewe, that a false presentation, or some mechanical cause, prevents the expulsion of the fœtus. When the ewe is nearly exhausted she will often suffer the lamber to kneel beside her and successfully afford the requisite assistance. If there is a violent struggle between the patient and the lamber, the fœtus will often be destroyed; but his help, when she quietly submits to him, will rarely fail to preserve the mother and her offspring. Let it be supposed that, from certain circumstances, she is driven to the pound, or that she is lying quietly by the lamber in the field. He should first endeavour to ascertain the nature of the presentation. Is the lamb coming in the right way, with its muzzle first, and a fore-foot on each side of it? If the tongue is not protruding from the mouth and becoming almost black, and her strength is not quite wasted, a table spoonful of his cordial, with double this quantity of the infusion, will probably increase or recall the pains; and the lamb will soon be born. If this is not effected in a quarter of an hour, a second dose of the infusion should be given; and, that being followed by no good result, he should try what mechanical assistance will do. He should draw down first one leg and then the other, endeavouring with his finger to solicit or coax the head onward at the same time. If he cannot readily get at the legs, he should push the head of the lamb a little backwards and downwards, when he will probably be able to grasp them. If he does not now succeed, the cause of the obstruction will be sufficiently plain, namely, the too great largeness of the head, which cannot pass the arch of the pubis; and, therefore, either tying the legs of the ewe, or an assistant keeping her down on her right side, the lamber should grasp the two fore-legs in one hand, and with one or two fingers of the other, urge it forward with as much force as is consistent with the safety of the lamb. The young one will rarely fail to be extracted by these means, except the head very much exceeds the common size."

The above directions are especially intended for the large flockmaster, in whose case, from the greater number of sheep, accidents are more likely to happen. But they may be read with profit by the small flockmaster, who, when difficulty *does* occur, will be better prepared to overcome it. We conclude with the following extract from an American writer:—

"When mechanical aid is employed, it is always accompanied with considerable fright to the ewe; and if she is permitted to escape immediately after the birth of her lamb, will often refuse to own it; therefore, should it be alive, let it be placed at once before her, and by its form and scent, she will, in most cases, recognise it as her offspring. On the whole, the surest way is, to secure the ewe in a small pound or shed, and there leave her for the day; for, if she has a supply of milk, rarely further trouble need be apprehended. Should she, however, under these circumstances, or any other, refuse to suckle, she must be held, and a teat placed in the mouth of the lamb. This alternative seldom fails to conquer all difficulty."

STEAM-PLOUGHS.

DIFFICULTIES AND PECULIARITIES.

We find some pertinent remarks, by Professor Wilson (who recently paid a visit to Canada), on the subject of ploughs and ploughing, in a lecture lately delivered before "the Highland and Agricultural Society." In the concluding portion of this lecture the Professor discusses the subject of *steam power*, as applied to cultivation. Two Canadians (by residence), Mr. Romaine, of Peterboro, and Mr. Cowan, of Toronto, having called public attention to this subject by plans and models of machines which, in their opinion, will accomplish the great *desideratum*, and one of them having obtained public aid to complete his invention, will, no doubt, make the subject interesting to our readers. It will be seen that a steam-plough according to Professor Wilson, must be something more than a copy of the common implement. This idea will not give much encouragement to one of the gentlemen above-named:—

"Although the necessities of man," says Professor W., "compel him to use the plough in preference to the spade, it is admitted by all that the work done by the two implements is of a very different character, the plough leaving the soil in a condition far less suited to the purposes of vegetation than the spade. This is more prominent on heavy soils than light. If we follow the operations of the two implements, this may be readily understood. The spade, a thin smooth blade, is driven down into the soil by the weight of the labourer, the handle is then forced back in a horizontal line, and the shoulder of the spade, acting as a fulcrum, a slice of soil is displaced equal to the depth of the cut. This is thrown forward in an inverted position, the original surface with its weeds and exhausted mould being buried, and fresh surfaces exposed. Now to the plough—here we have a tool of a rougher nature—a wedge is forcibly dragged through the soil to a certain depth, lifting up that which is *above it*, at the expense of that which is *below it*, this latter receiving virtually the whole of force required for the separation. The consequence is, that more or less, according to the soil, this lower surface is compressed to such a degree as to leave a dense and compact surface, through which the roots of plants have great difficulty to penetrate. The furrow slice, too, instead of being completely inverted, is not turned over to more than half or third of the way, the surface weeds are less perfectly buried, and the soil is not changed to the same extent as by the spade. The great desideratum of the day is, therefore, to obtain an implement that shall have, like the plough, the capability of doing a large amount of work, and, like the spade, of doing it in such a manner as to satisfy those conditions which we consder desirable for the purposes of successful cultivation.

"The advantages of animal over manual labour were shewn thousands of years ago, but it has been reserved for our own day to displace the animal by the introduction of another agent, steam—a power of far higher value, and which is, I trust, destined to play as important a part in the operations of the field, as it now does in the internal economy of the modern farm.

"Many implements and machines have been constructed, and much skill and ingenuity from time to time expended in the endeavour to realize this great desideratum; hitherto, however, the results have not been very satisfactory.

"To those who have watched the progress of steam as a substitute for manual or animal power in various processes even of the most complicated and delicate nature, and have recognised the beneficial results attending it, it must seem surprising that, although several attempts have been made to render it subservient to tillage purposes, they have hitherto all failed. The idea of a steam-plough is by no means new. Its successful realization, I hope, is not far distant.

"Without attempting to offer any speculations of my own as to the possibilities or probabilities of such a desirable end, I will conclude by giving you the opinions of a recent writer who always expresses himself with no less force than elegance. He observes, 'that it is worth while to ask what is the specific impediment that forbids the banns between the steam-engine and the ploughshare? What is it that prevents the versatility—that peculiarly marked attribute of steam-power—which can drive a vessel of a thousand tons across the Atlantic against a tide-wind and sea, or spin the finest thread with a touch more delicate than that of the fairest fingers—what prevents it from being applied to the clumsy performance of the plough? Because it is a clumsy performance, and that noble power will have nothing to do with it.'

"It is a law of which the annals of invention have given repeated proofs, that late discovered powers of nature will not "gear on" to those means and appliances which they have antiquated. They refuse to waste themselves. From the natural sympathy—so to speak—which exists between the "*best of its kind*" in every department of matter, may be deduced the perception of a corresponding law of antipathy between things separate and incongruous in their nature and degrees of excellence, and remote in the order of invention. It is not the inapplicability of steam power, but the incongruity with it of the plough—an implement employed for the purpose of applying animal power to the art of cultivation, and belonging only to that secondary class of powers—that forbids the union. The plough does not *cultivate;* other implements are required—the roller, the harrows, the scarifier—to complete the work, which, after all, is not so well done as one by operation of the spade.

"What we want is, not ploughing, so much as cultivation, that process which the farmer, by necessity, performs in three, four, or five acts, not nearly so effectually as the gardener performs in one.

"As well might we expect to apply successfully the boiler and cylinder of a locomotive to the pole of a four-horse coach, or the shafts of a waggon, or the lever-handle of a pump, or the distaff or spindle of the old spinning-wheel, as attempt to gear on steam to the elaborate clumsiness of a plough. In every case where steam has superseded animal labour (as it is its mission to do), it has to be harnessed to the work with a harness of its own; it has rejected old-fashioned tools and their appliances, and has seized, at once, the shortest means to its object. Instead of the leverage of the horse's legs pulling at the axle-tree, it seizes at once on the wheels, and drives it round, and instantly (by that law of occult affinities just alluded to) a demand is raised for the most perfect surface to run upon; the iron rail is supplied, and Mr. M'Adam, though a very good dog in his day, is discarded. So again, instead of working at the pump-handle, it seizes at once upon the sucker-rod and drives it up and down. Instead of wasting time and labour on the oar, it drives along the vessel by the continuous stroke of the paddle-wheel, or by the simpler motion of the screw. These instances I might multiply, but they are sufficient to illustrate the principles that should be regarded in our attempts to render steam power subservient to tillage purposes.

"Although I am quite aware of the extreme difficulty of introducing new machines that should necessitate new practices, no less from the inherent disinclination of farmers to give up old ones, than from the opposition of the various interests involved, still I am much inclined to believe that the agricultural intelligence of the country is sufficiently advanced to hail with gratitude the advent of a mechanical agent which would relieve the farmer from the anxieties of mind and animal wear and tear accompanying the present system of tillage by ploughs; and in common with every farmer throughout the length and breadth of the land, for all are deeply interested in its results, I feel that our warmest acknowledgments are due to the fostering care of this society for already having come forward to assist in its development."

VISIT TO MOUNT FORDHAM, N.Y.

While recently at New York, the writer made a short visit to the farm of Col. L. G. Morris, near Mount Fordham, about ten miles from New York, by the Haarlem Railway. Col. Morris has acquired much celebrity as an importer of the *best* Short horns to be found in England. Being a man of considerable wealth, intelligent and enthusiastic in his profession, he has many advantages over *small* breeders. Competing with noblemen with their £100,000 rent-rolls, for the purchase of the *gems* of the most celebrated English herds, Mr. Morris felt that he had rather a "hard row to hoe;" but by a little Yankee ingenuity he was able to carry off the prizes even from such rivals. Mr. Morris persuaded Mr. Becar, a wealthy New York merchant, who happened to be a fellow-passenger with him to England, to join in his purchases of a few superior animals. They attended Lord Ducie's sale; and for one cow, which we saw at Mount Fordham, paid the *highest price ever known to have been given for a Cow since the world began.* This animal was bid off at 700 guineas! She is not a very remarkable animal to look at; but the *blood* is the best in England. It was this that made her so great a prize in the estimation of breeders.

But the real "gem" of the herd was the "Duke of Glo'ster," a young Bull of the best blood, and almost perfect in his points. The English breeders were enthusiastic in his praise; and there was great competition among the bidders to secure him. He was also knocked down to Messrs. Morris & Co. for 500 guineas! An English breeder had been associated with the two enterprising Americans in the contest for him; and they were determined to have him at any thing under 1000 guineas!! The Englishman kept him for one year; and he then became the property of Mr. Morris and his friend. He is certainly a splendid animal—the best undoubtedly to be found on this continent, and perhaps in England. When we say "best," we speak of course with reference to his *blood* and *points*, as they are regarded by the short-horn breeder. Mr. Morris is about to have his likeness engraved; and promised to send us a plate. We hope, therefore, to present him to our readers in a future number.

We give below an excellent portrait of "Balco," (English Herd Book, 9918,) a bull which Mr. Morris now offers for sale. He won the first prize at the New York State Fair last year. We should be glad to see this animal brought to Canada. None better can be imported from England.

BALCO,
Imported by L. G. Morris, Esq., winner of the 1st prize in the imported class of three-year old Bulls and upwards, at the New York State Fair for 1854.

Colonel Morris informed us that he had sold "Balco," for $1200 to a farmer in one of the interior counties, but as the purchaser had failed to comply with some of the conditions of the sale, he was still in the market. Having used him for the last two years it became necessary to make a change; and

on the arrival of the "Duke of Glo'ster," Col. Morris was able to part with "Balco," who is regarded as one of the best bulls in the United States.

Among the cows of Col. Morris's herd "Bloom," whose portrait is given below, is certainly the "gem." She also was purchased at Lord Ducie's sale; and is as perfect in her "points" as the Duke of Glo'ster. Indeed, to our eye, she is less faulty. The Duke is a little flat-sided. We noticed this defect; but Col. M. thought it was owing more to his condition, which was low, than to physical conformation. But he certainly has not so round a barrel as Balco. The "authorities" have pronounced him A 1, and it would be presumption in us to cavil at their decision. "Bloom," however, is even more perfect than her picture, a thing by no

BLOOM

Was sired by "Sir Leonard" (10,827); Dam, "Elvira," by "Eolus" (3,733)—winner of the 1st prize in her class at New York State Fair, 1854.

means uncommon. She possesses the most highly prized strain of blood, and does no discredit to her pedigree.

We shall notice other animals that we saw at Mt. Fordham in our next issue.

We were mistaken in supposing that I. Morris intended to have a *public* sale this year. He will hereafter only sell to individual purchasers, privately. He has a large stock of Devons as well as Durhams. His horses, sheep, and pigs, are all of the best

breeds. We found Col. M. to be, not a scheming Yankee, without education or refinement, but a good specimen of the American gentleman—frank, courteous, hospitable, and well-informed, with English notions of honour in matters of business. He is a descendant of Robt. Morris, of revolutionary fame who was one of the signers of the Declaration.

We regretted to find, that in some of his dealings, with Canadian breeders Col. M.'s good nature has been imposed upon. We hope for the credit of our country, the parties in question will yet make good their engagements.

THE MONTHS—APRIL.

"Come, gentle *Spring*, ethereal mildness, come,
And from the bosom of yon drooping cloud,
While music wakes around, veil'd in a shower
Of shadowing roses, on our plains descend."

THOMPSON.

We have now entered upon the most interesting period of the year; a season of joy and hope, demanding the incessant attention and labour of the husbandman, whose important avocations must be prosecuted with vigour. The name of the month,—*April*,—is derived from a Latin word, signifying *to open*; as in these northern climates the agricultural year may be considered as opening, or commencing in early spring. Old winter has passed away with its frosts and storms, and with the increase of light and heat both the animal and vegetable worlds are awakening to active life and vigorous development. April, however, has always been regarded as a fickle month; it has its bright soft, balmy days, which are so peculiarly exhilirating and pleasant to the feelings after the cold and dreary season that has passed; but it has likewise its days of wintry rigour and of chilling showers, which are often felt by contrast as doubly unpleasant. In this country the heat of mid-day is often considerable, but as the nights are usually cold, vegetation makes but slow progress. The swelling buds and reappearance of birds, insects, and a few early flowers, are among the pleasing and unmistakeable indications of the advent of spring.

A very extensive, and in many respects, reprehensible practice has existed from, it is supposed, a remote antiquity—the making of "*fools*" on the first of April, thence called "*All Fools Day*." The origin and significancy of this custom are, like most matters of this sort, involved in considerable obscurity. It has long and extensively existed both in Europe and Asia, and likewise in many places on our own continent.

"'Twas on the morn when April doth appear,
And wets the primrose with its maiden tear;
'Twas on the morn when laughing Folly rules,
And calls her sons around, and dubs them Fools;
Bids them be bold, some untried path explore,
And do such deeds as Fools ne'er did before."

It is not improbable that the present custom is nothing more than a corruption of some ancient practice of a civil or religious nature in its original institution. Several rites that at first were unobjectionable, have, in the lapse of time, become so perverted, as to exhibit few or no traces of their original purport or significancy. The habit of uttering falsehoods, although it be only for sport, can admit of no defence, either on the grounds of morality or expediency, and the sooner this foolish custom is abandoned the better.

Maundy Thursday immediately precedes Good Friday. Some doubt exists as to the origin and primary application of this term. We are told, however, on good authority, that Maundy Thursday was so named from the *maunds*, wherein were formerly contained gifts, which English kings were accustomed to distribute among indigent people at Whitehall. Maund arises from the Saxon word maud, signifying basket; and by consequence for any gift or offering contained in the basket.

It was the practice not only of the monarchs of England to distribute gifts, consisting of food, clothing, and money on this day, but likewise of persons of high estate, and abbots of religious houses. In addition to these gifts, it was customary for persons of the highest rank to wash the feet of a certain number of poor persons, in imitation of our Saviour washing the feet of his disciples. Queen Elizabeth, in 1572, she being then in the thirty ninth year of her age, after bestowing her Maundy, washed and kissed the feet of as many poor men and women as she was herself years old. This was done at Greenwich—the queen kneeling while performing the ceremony, which was connected with religious observances. King James the Second was the last of our kings who washed the feet of the poor people in person; William the Third being the first sovereign who deputed the performance of this ceremony to his almoner. From the Earl of Northumberland's *Household Book*, begun in 1512, we find that he kept his Maundy, if at home, for as many poor men as he was years old. Wolsey also, in 1530, performed the same ceremony at the Abby of Peterborough, while on his

journey to the north. "Upon Palme Sunday," says Cavendish, "he bore his palme, and went in procession with the monks, setting forth the divine service right honourably, with such singing men as he then had there of his own. And upon Maundy Thursday he had his Maundy there, in our Lady's Chapel, having *fifty-nine* poor men whose feet he washed and kissed; and after he had wiped them, he gave every one of the said poor men twelve pence in money, three ells of good canvass to make them shirts, a pair of shoes, a cask of red herrings, and three white herrings; and one of them had two shillings."

This ancient practice of performing Maundy is still retained by the sovereigns of England—silver pennies and other coins being cast for the special purpose. Times and the outward modes of customs may change; and in such matters it is unjust and unphilosophical to try one age by the standard of another, while the spirit and fruits of genuine benevolence remain immutable.

Good Friday being one of the most solemn fasts of the Church, is indicative of an event of the most awful character and deepest mystery, pregnant with consequences of infinite importance to the race through all coming time. In a secular article we can only allude to this momentous subject, while treating of the seasons, merely remarking that there seems a peculiar fitness and adaptation to the nature and condition of man in associating in harmonious order the great events of our Lord's most holy life, which have now for eighteen hundred years inspired alike the rich and the poor, the philosopher and the peasant with the hope of immortality and endless progress, with the course of the natural year. In this way our ordinary and daily duties and experience become associated with the commemoration of those great events characteristic of the introduction of Christianity, which imparted such an astonishing impetus to the progress of human improvement, and a higher and ever-expanding form of social civilisation.

Hot cross-buns have come down to us from an early age, and yet remain the most popular symbol amidst the differing and conflicting religious opinions of the more ancient customs of Christianity that the Reformation has left to us. These buns were in ancient times bestowed by the priest in the church as alms, and to those who from any impediment could not receive the consecrated elements of the Eucharist. They bore then as now the sacred impress of the cross, and were considered on that account the most fitting food on the day of the crucifixion.

Easter Day, or the Sunday following Good Friday, is among the grandest festivals of the ecclesiastical year, commemorative of the glorious event of the Resurrection. It was anciently called the "Great Day;" the "Feast of Feasts;" and the "Sunday of Joy." It is the most important, in secular transactions, of the moveable feasts, inasmuch as the day on which Easter falls regulates all the rest. The first Sunday *after* the full moon immediately following the 21st of March, is ordained to be kept as Easter Sunday. Easter Day cannot fall earlier than the 22nd of March, nor later than the 25th of April in any year, and hence these two days have obtained the appellation of *Easter Limits*.

A very ancient custom exists in many countries of making presents of eggs at this season of the year, having reference, no doubt to the great event of the Resurrection. In process of time the religious character of presenting Easter eggs became, in a great measure, lost sight of, and they were considered merely as marks of friendship, or a token of affection from one young person to another. This practice still survives in a few parts of England, particularly in the north, where the greatest number of eggs are distributed among the young folks by kind grandmothers and aunts. These eggs are coloured by boiling them in some coloured solution, and names and ornaments are depicted on the shell. In Cheshire, children go round the village and beg for "an egg, bun, cheese, or an apple, or any good thing to make us merry," and ending with, "and I pray you, good dame, an Easter egg."

The remains of a former extensive custom are yet to be found in a few parts of England, called *Heaving* or *Lifting*, on Easter Monday and Tuesday. A decorated chair was provided in which the person to be lifted was placed, when the chair was hoisted three several times from the ground. The person lifted was expected to pay a fee to the lifters after receiving a salute from each of them. On Easter Monday, between the hours of nine and twelve, the men performed this ceremony towards the women; on Tuesday the women did the same for the men. The ceremony was sometimes performed without the chair, often, no doubt, to the annoyance of the females. Edward the First is said to have submitted to this custom, and was hoisted by a party of ladies of honour. This practice, absurd as it may now appear, was do doubt

n its origination connected with the idea of the Resurrection. Indeed, many of the most important events and teachings of early Christianity were periodically illustrated in the churches by dramatic representations. Plays were got up and performed by grave ecclesiastics for the edification of the people, and the scenery, dresses, and performance generally were often of a grand and imposing character, adapted to the peculiar wants of the age. It were sheer folly and ignorance of human nature and progress to rail against these primitive usages which were, no doubt, suited to the requirements of the people, characterised by simplicity of manners and a large faith. We owe infinitely more to our earnest and simple-minded forefathers, in what constitutes much of our physical comforts as well as moral wellbeing, than modern mammonism and self sufficiency are wont to acknowledge. The great error of modern times appears to be the indiscriminate laudation of the present at the expense of the past.

St. George's Day which falls on the 23rd of this month, is the only remaining festival of note that calls for remark here. Many ridiculous legends and incredible stories have been told of England's Patron Saint, so much so as to needlessly occasion, or strengthen doubts in persons of a naturally sceptical turn of mind even as to his existence. "Divested of all this extraneous matter, however, the ancient and well-authenticated history of *St. George of Cappadocia*, called by the Greeks the *Great Martyr*, appears to be, that he was born of respectable, but, though not wealthy, Christian parents; that he afterwards acquired a large estate in Palestine, and entered into the service of Dioclesian the Tyrant, who, in ignorance of his being a Christian gave him the command of a legion, and a seat in the Council. On a breaking out of a persecution against the Christians, St. George quitted the Emperor's service, and openly distributed his whole fortune in their support and assistance. Dioclesian would have recalled him, but finding that neither offers of aggrandizement or the threats of death could move him to abandon his faith, at length, after putting him several times to the torture, carried him to be ignominiously dragged through the streets of the city of Lydda, and finally, beheaded on the 23rd of April, 290. St. George is also the patron of the most noble order of the Garter, the most ancient and distinguished of the British orders of knighthood, which was founded by King Edward III. in 1349. All the installations and festivals of the order are held on this day."

April is one of the busiest months of the year to the farmer, especially in this country, where the season for active preparation and sowing does not commence till the beginning, and sometimes the middle or latter end of the month. At the time we are now writing (March 27th) the ground is thickly covered with snow, with few indications, except the lengthening of the day, of the near advent of spring. A sudden change, however, may take place, and agricultural operations may not, after all, be seriously retarded. Every thing should, ere this, be got in readiness by the thrifty farmer, so as to commence operations effectually the first opportunity.

Nothing, however, is gained, but, on the contrary, much loss is sometimes sustained, by an impatient anxiety to commit the seed to the ground at some fixed and early period. The seasons being variable, the prudent and skilful husbandman will adapt the time of performing his work to the character and actual necessities of each year. No absolute rule of universal application can be laid down for the performance of these things. It may be safely said, notwithstanding, that the proper time for sowing is when the soil is sufficiently prepared, and the atmospherical conditions in regard to heat and moisture are favourable to vegetation. The nature of the soil ought also to be considered, and its adaptation to particular kinds of plants; for what might be necessary and beneficial on one variety and condition of soil might be quite unsuitable to another. Nothing short of careful observation and experience can impart to the farmer this practical and most essential kind of knowledge. He must acquire it in the field rather than from books. Virgil, the prince of Latin poets, and a close observer of nature, has well said:—

"To know the culture, habit of the grounds,
What this refuses, and in what abounds;
Nature on each her nursing care bestows,
Here springs the corn, there the rich vineyard glows;
While fruit-trees bud to deck another place,
And grasses flourish with unbidden grace."

Such as underdrained and furrowed their land in the fall will begin to experience the advantage of such permanant improvement this month. The melting snows and rains will speedily find an egress to the drains, the ground will rapidly dry, and, as a consequence, the important operations of ploughing, harrowing, and sowing will be done both earlier and better; thus securing the conditions necessary to an abundant crop. We observed during the partial thaw of last week some underground drains made last year, copiously discharging water, al-

though the ground, below a few inches from the surface, was still frozen. Under-drains, however are not in full action till the frost is quite out of the ground, and they are, consequently, of the most service during autumn and the latter part of spring.

After depositing his seed in the ground, how carefully does the farmer mark appearances and watch the wonderful effects produced upon his fields by a few days or weeks of bright sunshine, accompanied by congenial vernal showers:—

"The work is done, no more to man is given,
The grateful Farmer trusts the rest to Heaven
Yet oft with anxious heart he looks around,
And marks the first green blade that breaks the ground;
In fancy sees his trembling oats uprun,
His tufted barley yellow with the sun;
Sees clouds propitious shed their timely store,
And all his harvest gathered round his door."

FARMER'S BOY.

—*B.*

OF THE DIFFERENT KINDS OF MANURE AND THEIR APPLICATION.

(*From "Outlines of Flemish Husbandry".**)

The collection and application of manure is the greatest secret of Flemish husbandry. Upon their poor, light soils nothing could be raised without an abundance of manure. It is, consequently, an object of minute attention to the Flemish farmer to collect as much as possible, and to apply it in the most advantageous manner. For this purpose the dung of the different domestic animals is generally, kept separate, especially that of cows, from horses the former being thought better for dry sandy soils, the latter for colder loams and clays. They look upon pigs' dung as cold and inferior, adopting, in this respect, the opinion of the ancients. We think differently; but this may be easily accounted for. The Flemish store pigs are fed in the most miserable manner, and merely kept alive on weeds taken from the fields or by very scanty grazing in rough pastures. We need not be surprised, therefore, that their dung is poor. The cows are better fed, and their dung is, consequently, richer. Cow dung is thought to last longer in the soil, and its effects on the second crop are more conspicuous than that of horse dung, which stimulates more and is sooner effete. Sheep, which are so important to the light-land farmer in England and Scotland for their manures, are not kept in sufficient quantities in Flanders, nor well enough fed to do much good to the land. They are commonly housed every night, and driven about in the day to gain a scanty subsistance along the roads and sides of hills. The manure collected in the sheepfold is carried out on the land, and its effects are daily appreciated. A flock is occasionally folded on a clover ley before it is ploughed up, but never on the turnips, which are always given to the cows. This is owing to the small extent of the farms, which do not allow of a considerable flock of sheep being kept by any one farmer; but a flock is made up of different lots of sheep belonging to several proprietors, or put under care of a common shepherd, or it is sometimes the property of the shepherd, who occupies no land, but lets out the sheep to fold, or sells the manure.

But the great auxiliary of the Flemish farmer is the *urine tank*, wherein are collected not only the urine of cows and horses, but also the drainings of the dung-hills. The urine tanks are generally sunk below the level of the ground, and have the sides built of brick and the bottom paved; they are of various dimensions, according to the number of cows and horses on the farm. Attached to the distilleries, where many beasts are constantly kept to consume the refuse wash, there are very large urine tanks of an oblong shape, divided by partitions into different chambers, so that the liquor may be of the proper age when it is used, which some farmers think ought to be six months. Each chamber is about eight feet square and six or eight feet deep; they are sometimes vaulted over, but frequently only covered with loose boards. As urine and the emptyings of privies are sold wholesale and retail, there are many large tanks near the rivers and canals, where the dealers have sometimes large quantities in store. Some of these consist of many square pits, like tan-pits, bricked round, and the inside covered with a cement, which prevents loss by filtration. There is generally in a corner of each pit a graduated scale, by which the number of barrels or tons of liquid in the tank may be ascertained by observing the height of the surface. These tanks are gradually filled by boat loads brought from the large towns; and when the season arrives for sowing (in spring and autumn), the farmers come with their carts and tubs and purchase as much as they may want. The price varies from three to five francs (2s. 6d. to 4s.) per hogshead, according to the quality. In a small farm of

* We are indebted to the polite attention of WM. HUTTON, Esq., Secretary of the Bureau of Agriculture, for this interesting chapter from a small Flemish work on Agriculture which he is about translating into French for the benefit of Lower Canadian farmers. Much that it contains will be found more or less applicable to this Western portion of the Province; and he hopes to be able to lay before our readers more of his useful publication in subsequent numbers.

thirty to forty acres, the tank is generally about twenty feet long, twelve wide, and six deep, with a partition in the middle, and arched over, leaving an opening for the pump, and another sufficient to allow a man to go in to empty out the earthy deposit which falls to the bottom. A trap-door shuts over this aperture to prevent accidents. Sometimes the tank is round like a well, with a domed top, and so deep in the ground that it has a foot or two of the earth over it. The situation of the tank is either in the farm-yard near the entrance of the cow-house, or immediately behind it; sometimes it is like a cellar under the building, but this is apt to cause a disagreeable smell in the cow-house. We here describe those which we consider the most convenient. The form and capacity of the tanks vary greatly according to the means and notions of the proprietors of the farms; *but a tank of some kind or other is considered as indispensible an appendage to a farm as a barn or a cow-house.* The farmer would as soon think of dispensing with his plough as with his tank; and no expense or trouble is spared to keep this well supplied. The numerous towns and villages in Flanders afford great help in the way of manure. The thrifty housewife and her active substitute the maid, know the value of what in our households is thrown away or wasted and lost. A small tank or a tub sunk in the ground in some corner contains all the liquid which can in any way be useful; soap-suds, washing of dishes, &c., are carefully kept in this reservoir, until, once a week, the farmer or contractor calls with his tub on a cart; and this, mixed with the contents of privies, which are frequently emptied, he keeps in large cisterns for use or sale.*

But this supply is not always adequate to the wants of the farmer, and then he has recourse to rape-cakes dissolved in water or in the tank, which is expensive, and can only be profitable where flax bears a good price—this being the crop for which rape-cakes are chiefly used as manure. Every means, therefore, of augmenting the supply of urine is had recourse to, and the most efficacious is the establishment of distilleries. These answer the double purpose of consuming produce and increasing manure by the number of beasts which are fattened on the refuse wash. It is calculated that every beast produces at the rate of ten or twelve tons of dung and twenty-six hogsheads of urine in the year. A moderate distillery has fifty or sixty head of cattle constantly stalled. There, then, is supply of manure for several hundred acres of land every year. Formerly there were a great many distilleries in Flanders, but the duty on spirits and the interference of the government has much reduced their number, so that the farmers complain of the loss of this manure, and the consequent deficiency of their crops.

The dung of pigeons and domestic fowls, where it can be collected in any quantities, is highly valued. The mode of using it is either in a dry or powdered state, to which it is reduced by thrashing with a flail, when it is sown with the seeds of leguminous plants, or else dissolved in the urine tank, and thus spread over the land. This manure is chiefly reserved for kitchen gardens—it promotes the growth of vegetables and produces no weeds.

The solid dung, from which the liquid has been allowed to run off into the tank, must be carefully attended to, that it may not be too dry and become *foxy*, as it is called, or burn. It is therefore mixed up with earth and any useless vegetable matter which can be collected into a heap or compost; and when it appears too dry some of the liquid from the tank is poured over it to excite fermentation and accelerate decomposition, or it is merely watered when there is sufficient strength in it to produce heat.

In order to increase as much as possible the quantity of solid manure, there is in most farms a place for the general reception of every kind of vegetable matter which can be collected. This is a shallow excavation of a square or oblong form, of which the bottom has a gentle slope towards one end. It is generally lined on three sides with a wall of brick to keep the earth from falling in, and this wall sometimes rises a foot or more above the level of the ground. In this pit are collected pavings of grass sods from the sides of roads and ditches, weeds taken out of the fields or canals, and every kind of refuse from the gardens;—all this is occasionally moistened with the washings of the stables or any other rich liquids; a small portion of dung and urine are added, if necessary, and when it has been accumulating for some time, it is taken out; a portion of lime is added, and the whole is well mixed together: thus it forms the beginning of a heap, which rises gradually, and in due time gives a very good supply of rich vegetable mould or compost well adapted to every purpose to which manure is

* In Ghent we were informed that the sum paid to the servants for the liquids collected, and which is their perquisites, often amounts to as much as they receive for wages; and as, consequently, the wages are proportionally lower, it is, in fact, the masters and mistresses who benefit by it.

applied. The place where this accumulation is made is called, in French, a *coupessoir*, and in Flemish or Dutch, *smoorhoop*, which may be translated *smothering heap.*

Besides this manure which is collected on the farm,* the *vidanges,* or emptyings of privies obtained from the towns and the sweepings of streets, a large quantity of peat ashes imported from Holland are used, principally as a dressing for clover. These are the ashes of the common fuel in use in Holland, and are sold in Flanders by the bushel, as the Newbury ashes are in Berkshire. Mr. Radcliffe has given an analysis of these as follows:—

Silicious earth,	32
Sulphate of lime,	12
Sulphate and muriate of soda,	6
Carbonate of lime,	40
Oxide of iron,	3
Loss,	7
	100

The effect of these ashes seems to be very similar to that of the Newbury ashes, and by comparing the analysis of the two, we may be led to the ingredients on which the result chiefly depends. Newbury ashes, according to Davy, are composed of:—

Oxide of iron,	48
Gypsum (sulphate of lime),	32
Muriate of sulphate of potash,	20
	100

It appears therefore probable, that the effect depends upon the combination of the lime, or the alkalies with sulphuric or muriatic acid, and that the silica in the Dutch ashes, and the iron in those from Newbury, have little or no effect on vegetation. This accords with the experiments made with gypsum. The great effect of the ashes in Flanders may arise from the total absence of calcareous earth in the light soils on which they are chiefly used. In the polders or low lands they are thought of so little value that the ashes produced by the burning of weeds are often collected and carried in boats to be sold for manuring the lighter soils of the uplands. But these are not so valuable as the peat ashes.

Wood ashes, after the greater part of the alkali has been abstracted for bleaching, are still considered as of great use to the land. Soapers' ashes are in great request for cold heavy soils; and sugar scum from the refiners, if it could be procured in sufficient quantity, would be an excellent manure for every kind of soil. Where it can be obtained, they usually throw it into the urine tank; and the mixture is then considered as almost equal to the vidanges, which are looked upon as the *ne plus ultra* of manures. Soot is used as a top-dressing for wheat, or clover in spring, as it is with us. It is thought to destroy insects and hasten vegetation.

The weeds, which grow abundantly in all ponds, canals, and ditches in this level country, where the current is never rapid, are mown in spring, and used in their green state as manure for potatoes. They are laid in the furrows, and the sets placed over them; the furrow is then filled up by the plough and the weeds decomposing very rapidly, greatly assist the growth of the potato plant. So rapidly do these weeds ferment, that much of their value is dissipated if they are left only forty-eight hours in heaps before they are put into the earth.

We have already noticed rape cake dissolved in water as a substitute for urine. It is also used in powder, either as a top-dressing or sown with the seed. The practice of sowing in drills, and putting in dry manures in contact with the seed by means of drilling machines, has never been adopted in Flanders; nor has the use of ground bones been hitherto introduced to any extent. There is perhaps no modern invention which would be so applicable to the Flemish sands, or so advantageous.*

The manner in which manure is applied to the land for different crops will be explained as these are separately treated of; but the general principle which pervades the whole system of manuring is worthy of attention. Two great objects are always kept in view. The first is to obtain the most abundant crop of whatever is sown; the next is to impregnate the soil with an increasing power of production, if possible, or, at least, to maintain that which has been obtained. In consequence of this, almost every crop has a certain portion of manure

* Since the above was written, the subject of liquid manure has been very ably brought to the notice of agriculturists in a small work by Mr. Cuthbert Johnson, and also by a paper of Mr. Kimberly, in which he announces an important discovery, made by himself, in the management and acceleration of the putrefactive fermentation in vegetable substances. The great activity of manure applied in a liquid state, especially in very light soils, is well known to the Flemish farmers; but they know also that it is rapidly exhausted, and requires to be repeated annually unless solid dung be used at the same time.

* Since writing the above, we understand that the Belgian Government having ascertained the great advantage of bones for manure, and also in making animal charcoal for the refining of sugar, has laid a heavy duty on the exportation of them.

applied to it, which varies according to the nature of the crop to be raised, and that which has preceded, experience having taught that some crops exhaust the soil more than others.

But it is not the mere surface that they desire to manure. They well know that the deeper the soil is fertilized the greater will be the profit and the less the labour. They are not satisfied with enriching the land to receive the seed, they furnish food for the growing plant in different stages of its growth if they think it necessary. There is, in consequence, no fluctuation in the growth—no check at a time when the plants require support. The seed is made to vegetate rapidly by being in contact with the rich juices of the manure, and hence a much smaller proportion of seed is required. The young blade is invigorated by a judicious watering, and is sooner out of danger of the attacks of insects.

Liquid manure is carried to the fields in common water-carts, which consist of two wheels and shafts, carrying a cask containing from sixty to one hundred and twenty gallons of liquid. The cask has in the under part a hole, two or three inches in diameter, secured inside by a valve: under this is a board, a little slanting, to spread the liquid as it flows out of the cask. A man usually rides on the horse which draws the cask, and opens the valve when required. There is an advantage in riding on the horse, as it does not add to the weight of the load on the wheels, which in light soils would be apt to sink deep. In a momentary exertion it assists the horse by the weight on his back; and the heavy Flanders horses are well able to carry a man and draw a light load at the same time. When the cask is empty, the horse trots home for another load, and no time is lost. It is astonishing what advantage there is in accustoming horses to trot when they have no load—it actually fatigues them less than the continued sleepy walk. Who would suppose that the Flemish and Dutch farmers surpassed us in activity? but whoever has been in the Netherlands in hay time or harvest must acknowledge it.

The dung, which is carried in a solid state, is generally used at a time when it is in active fermentation, as it is supposed to have the best effect. To insure this in some districts, as the Waes country, where the minutest attention is paid to every circumstance which can increase fertility, the dung is laid on the field in moderate heaps, and on each heap a certain quantity of urine is poured to excite fermentation. When it becomes sensibly heated, the dung is spread out and immediately ploughed in. After ploughing in the manure, the land is left for some time, and then a second deep ploughing is given to incorporate the decomposed dung with the soil, but so as not to bring any to the surface. A short time before sowing, the liquid manure is poured over; and this enriches the surface to make the seed germinate sooner.

Lime is not much used on the light soils, but commonly in the cold and stiff. As it is generally brought from a distance, it is dear; and this prevents any extensive application of it. Marl is found in a few spots, and serves to improve the poorer lands within reach of it.

(*From the Mark Lane Express.*)

Dear Sir,—In your paper for this week I find a letter from Mr. Forbes of Windsor Forest, on the advantages of supplying sheep with salt, as a preservative from the foot rot; but as your respected correspondent has not pointed out the *rationale* of the practice, and the manner in which it produces its beneficial effect, I will endeavour, with your permission, to supply the deficiency of his letter; and for the benefit of such of your readers as have not paid attention to the subject, point out the sovereign virtues of common salt [or muriate of soda,] and the absolute necessity of its use, *by all animals*, for the preservation of health.

The outward application of salt to dead animal flesh for antiseptic purposes is too well known to require a single remark; but that the same qualities which render it so necessary in the preservation of dead meat has an equally beneficial effect upon the living animal, is not so generally understood. It is nevertheless a fact, that common salt prevents that tendency to putrescence of the nutritous portion of food in the stomach, which when they are conveyed into the blood, produce fever, boils, sores, and a variety of other dangerous or troublesome disorders. Medical men, however, are well acquainted with the fact that the prevalence of these evils amongst the poor is, in a great measure, ascribable to their not using salt with their food; and that the offensive smell so frequently perceptable in the dwellings and near the persons of many of the poor arises from the same cause, much more than from their want of cleanliness. It is, in fact, impossible for a person or a family to sustain health long together without the free use of this *simple* and *cheap* condiment.

Salt acts upon the juices of the stomach as a corrective of that tendency to acidity which is the basis of putrescence, and in a proper quanity, renders the blood healthy and active. It promotes insensible perspiration by preserving the pores of the skin from being clogged up by those unctuous matters, which without it would be passed from the stomach into the system in an impure state. Any person who habitually eats his food whether animal or vegetable, without salt, will soon find himself subject to diseases which [although he may ward them off by medicine] will not fail to return upon him from time to time, as long as he neglects it; nay his *very breath* will betray that neglect. But they who constantly use salt, though not absolutely exempt from disease, has at least ten chances to one in favour of the preservation of their health.

The same principle is as applicable to the inferior animals as to man, for, in this respect, their constitutions are precisely similar. No stronger proof, in fact, of the worth of this assertion can be adduced than the eagerness with which all animals seek for it. Horses, horned cattle, sheep and pigs will almost pull their keepers to pieces, if they find they have salt about them, in order to get at it; and all fare the better for it, from the same cause. The freedom of Mr. Forbes' flock from the foot-rot was undoubtedly produced by the antiseptic qualities of the salt, which by correcting the juices of the body, and purifying the blood, prevented that tendency to putrescence which in the three *rigs* settled in the feet; *the dampness of the meadow being the exciting cause*, which the salt would have neutralized.

I have reason to believe, too, that the use of salt would prove efficacious in preventing that fatal disease to which very fat sheep are liable when at turnips towards the spring, and which is equivalent to apoplexy in the human frame. I have sometimes seen three or four fat wethers in a flock of two or three hundred "drop" in a day. From perfect health, and whilst quietly feeding they suddenly fell, and were dead before I could get up to them. This same disease arises from the grossness of the fluids, and especially the blood, produced by the same tendency to putrescence which clogs the current and prevents the free flow of the juices so essential to health.

I would therefore recommend all your agricultural readers to supply with salt, not only their sheep, but every animal on their farms, and they will certainly find their account in it. The expense now is not worth a thought, when compared with the benefit they would derive from it. The best and cheapest mode of its application is by using the rock salt, a lump of which being put in the manger for horses, and trough for other animals (protected from the rain,) and they will soon find it out. Their natural instinct tells them that it is beneficial to their health, and they will look for it as anxiously as for their food.

Perhaps it is one of the most remarkable illustrations of the principle I have been endeavouring to elucidate, that the vast accumulation of the fossil bones of those extinct animals—the mammoth, &c. —discovered in America, are found at a place called, in the quaint phraseology of that country, "*Big bone-lick.*" It is, in fact, a salt spring, the subsoil of which is a clayey quagmire. And the probability, according to all human appearence, is, that these huge animals when resorting thither to partake of the salt, quarrelled about it, and in their struggles sunk and perished in the mud. I should add, that the discovery was made by observing the deer and other animals resorting thither to lick up the salt.

Yours truly,

AN OLD NORFOLK FARMER.

London 28th Dec., 1854.

P. S.—If your correspondent "Enquirer" would supply his cattle freely with salt, he would find it beneficial in preventing, in a great measure, the "*Black quarter*," or, as it is called in Norfolk, "*Black-water.*"

USEFUL DISCOVERY.—It is not generally known that soap and water rubbed upon a hone, as a substitute for oil, is peculiarly effective, and gives a much smoother and finer edge to a razor than can be produced by oil. It is suggested that this is also a better material than oil for setting surgical instruments.

PRESENTATION OF TESTIMONIAL TO JOHN HARTLAND, Esq.

On the afternoon of the 1st of March, a number of the County Officials, and the leading Agriculturists of Guelph, Puslinch, Eramosa, and Nichol, assembled in the "British Hotel," for the purpose of presenting John Harland, Esq., the Secretary of the County Agricultural Society, with several articles of Plate, the produce of a subscription among the agriculturists of the vicinity and gentlemen of the town of Guelph, in testimony of their appreciation of his services during many years as Secretary of the County Society, and otherwise in the promotion of the interests of the agricultural community of the locality.

A SILVER SALVER,

beautifully and chastely ornamented with figures of horses in harness, oxen in yoke, sheep, and other animals, the produce of the Province, engraved in alto relievo in panels around the interior surface, and bearing in the centre, the following inscription:—

PRESENTED

To John Harland, Esq.,

AS A TOKEN OF RESPECT FOR HIS VALUABLE SERVICES TO THE AGRICULTURAL INTEREST OF

THE COUNTY OF WELLINGTON,

Canada West.

1855.

Upon the Salvar was placed

A SILVER CUP,

bearing on one side of the pedestal, a sheaf of wheat in a horizontal position, on the opposite side a sheaf of oats; the heads of the grain in each being most beautifully and correctly represented, erect or drooping towards the band. The other sides of the pedestal bore shields resting against the stems of trees, supported by cornucopias, and surmounted and surrounded by agricultural implements—spade, axe, scythe, sickle, grain rake, fork, &c., the one bearing the same inscription as the Salver, the other showing agricultural stock in the compartments. The brim of the Cup was tastefully enwreathed with vine leaves and clusters.

The third article was

A SILVER SNUFF BOX

of large dimensions, elaborately ornamented, and bearing the above inscription on the lid.

The testimonial was manufactured by Mr. J. G. Joseph, of Toronto, and evidenced the correct taste and artistic skill of the maker.

John McCrea, Esq., President of the County Agricultural Society, presented the testimonial by reading the following address:—

SIR:—On behalf of the Committee and Subscribers to the above testimonial, I have the honor to congratulate you on the very flattering manner in which all have cordially joined to honor you on the present occasion, and to express their warm approbation of your general affable bearing towards your friends and acquaintance, and the very skilfull manner in which you have conducted the affairs of the Agricultural Society of this County.

Your general knowledge of agriculture, the first and most noblest employment given to man, pointed you out as the most fit and proper person to organize the Agricultural Society for this fine county, of which you have been and are so distinguished a member, in the success of which you have been so devo-

ted an advocate. To you the continued progress of the Society, and the advantages thereof brought before the public, must in the main be attributed, for although you may have been directed and encouraged by the body of the Directors, yet without your constant aid and advice, the various Presidents and Directors never would have brought the Society into successful working order.

Again, as a member of the Board of Agriculture, and by your essay on the capabilities of our County, you brought your name before the public and made known to the Province the fitness of the soil of our county to bring all the cereal productions of the earth to perfection, as well as the capabilities to raise the finest stock in Canada, encouraging the industrious emigrant to make a settlement among us.

Your long tried and valuable services as Secretary and Treasurer of the County Agricultural Society for so many years, has gathered around you a circle of friends and admirers, who have now invited you with feelings of esteem, respect, and sincerity, to this social meeting in order that they may join in the pleasure of presenting you with the three articles of Plate now before the Company, as a small token of that friendship and regard which your public character and private worth have called forth,

Mr Harland, who was evidently much affected by the complimentary style of the address, replied as follows:—

In the course of the many years during which I have had the honor to hold the office of Secretary to the Agricultural Society of this County, it has been my fortune to receive from its members so many acts of courtesy and kindness, that I have very frequently been at a loss to find words sufficiently strong to express my appreciation of them.

You will, I am sure, gentlemen, readily imagine that if it was difficult for me to express my gratitude for the favors shown me on ordinary occasions, I must, at this moment be placed in a most perplexing situation.

The eloquent eulogium which has just been pronounced upon me, and in appreciation of my poor services, was of itself sufficiently bewildering; but accompanied, as it has been, by the elegant, the valuable, the enduring testimonial of your regard and esteem so handsomely bestowed upon me, the effect has been most intoxicating.

Gentlemen,—I thank you with my whole heart. I shall ever treasure up a sense of your kindness and generosity in my memory. These three beautiful articles of plate shall, while I live, be constantly before me—they will, I am certain, have the effect of stimulating me to renewed and still greater exertions to deserve the good opinion and kind wishes of my neighbours; and when I die, they shall be divided amongst my three sons, with the strongest injunctions that they may be preserved heir-looms of the family, so that as long as there is one of the name of Harland in existance, he may be reminded of the liberal and highly valued friends of his progenitor, who was secretary to the Agricultural Society of the County of Wellington about the middle of the nineteenth century. (Applause)

The presentation over, about 30 gentlemen present sat down to a cold collation handsomely got up by Mr. P. Moran, the new host of the "Ould British," Mr McCrea and Col Saunders occupying the head and foot of the table; on the conclusion of which, the different articles composing the testimonial were, to us a Scotch term abundantly expressive to a majority of our readers, *handseled*, and so ended the ceremony of the presentation of a testimonial alike creditable to the intelligence and energy of the recipient and the gratitude and liberality of the donors.

WHEN OUGHT LIME TO BE APPLIED?

Prof. Johnson says:—"In regard to the period of the year and of the rotation, there are three principals by which the procedure of the practical man ought chiefly to be directed.

"1. *That lime takes some time to produce its known effects upon the soil.*—It ought, therefore, to be applied as long as possible before the crop is sown. For spring corn, it should be applied in early autumn; on naked fallow where the land is allowed to be at rest for a year. or on grass fields before breaking up, where pasture is to be immediately succeeded by corn.

"2. *That quick-lime expels ammonia from decomposed and fermenting manure.*—It should therefore, not be brought into immediate contact with such manures. It is for this reason, as well as for the first stated, that lime is applied to the naked fallow, to the grass before breaking up, or along with the winter wheat after a green crop, which has been aided by fermented manure. When ploughed into the fallow, or spread upon the grass, it has had time to be almost completely converted into the mild state, (that of carbonate,) before the manure is laid on. In this mild state it has no sensible effect in expelling the ammonia of decomposing manure.

"3. *That quick-lime hastens or revives decomposition of inert inorganic matter.*—This fact also indicates the propriety of allowing the lime as much time as possible to operate before a crop is taken from land in which organic matter already abounds. Or where fermenting manure is added, it advises the farmer to wait until spontaneous decomposition becomes languid, when the addition of lime will bring it again into action, and thus maintain a more equable fertility. It should not be forgotten that the above remarks refer to *quicklime*, the state in which, in England, it is so extensively used."

FAMILY JARS.

Jars of jelly, jars of jam,
Jars of potted beef and ham,
Jars of early gooseberries nice,
Jars of mince-meat, jars of spice,
Jars of orange marmalade,
Jars of pickles, all home-made,
Jars of cordial elder wine,
Jars of honey, superfine,
Would the only jars were these,
Which occur in families!

THE OLDEST TREE IN THE WORLD.—Perhaps the oldest tree on record is the cypress of Somma, in Lombardy; it is supposed to have been planted in year of the birth of Christ and on that account is looked on with reverance by the inhabitants; but an ancient chronicle at Milan is said to prove that it was a tree in the time of Julius Cæsar, B.C.42. It is 123 feet high, and 20 feet in circumferance at one foot from the ground. Napoleon, when laying down the plan for his great road over the Simplon, diverged from a straight line to avoid injuring this tree.

Horticulture.

HINTS FOR THOSE WHO NEED THEM.

"Gardening," says Socrates, "is the source of health, strength, plenty, and honest pleasures."

April, the first of the Spring months in this latitude, is of the greatest importance to the gardener. Many processes must be performed, if the weather permit, and not a few vegetables may be put into the earth. The amount of labour to be performed will vary, of course, as the season is more or less forward; but in any event, he who would have his garden produce plentifully in the coming months must be diligent during this. The following hints may be found useful:—

KITCHEN GARDEN.

ASPARAGUS.—Supposing the beds to have been made in a previous year, there is work for the gardener. The chief is to loosen the earth about the plants. Care must be had that in performing this, the roots are not wounded or disturbed. The gardener should provide himself with a fork, prongs to be one inch wide, with blunt points. A common dung fork will answer. Thus provided, pass over the beds, forking them well, so as to loosen the soil to the depth of several inches, and moving the manure with the soil. A few radish and lettuce may be sown upon the bed after the forking is done and before the raking. If too many be not put in, no injury will ensue to the asparagus.

Beets.—To have these early requires a very rich soil. Sow the seed in drills opened from 10 to 15 inches apart and one inch in depth. After they come up the plants should be thinned out, leaving a space of five inches between each plant. Mangel wurzel and sugar beet should be put in drills 18 inches to two feet apart and twelve inches in the rows.

Beans.—Those desiring to have early snap-beans may sow a few in the latter part of the month, but not even then unless they can select a spot exposed to the sun and secure from the cold winds which often prevail in April.

Celery will flourish best in a deep, moist soil, friable, and inclining to lightness, and withal very rich. It should be sown early. The earth should be prepared very thoroughly. It flourishes best in a deep moist, rich, friable, soil. It is of prime importance that the spot selected be free from weeds, as the plants when young are very delicate and easily destroyed. The seeds are put in broadcast and scattered thinly.

Cabbage Plants which are growing in the hot beds should be cautiously introduced to the outer air, to render them hardy and fit for transportation. This process may be performed about the last of the month, if the weather is favourable.

Egg Plant.—If sown this month should be in a hotbed, with a view to forward them. When from five to six inches high the plants should be pricked up and planted in the bed, to prepare them for final removal to the open ground.

Lettuce should be sown without delay where they will have a warm southern exposure, and should be transplanted at the earliest possible period.

Parsley should be sown this month. It makes a very pretty border if sown in single rows on the edge of the square. This is the most economical method, and while it economizes space it ornaments the garden.

Peas.—This delightful vegetable requires careful cultivation. To have them early, sow without delay, in ground well prepared for the reception of the seed. Continue to sow every two weeks, and thus a constant supply may be secured throughout the season, for as one set of vines cease to bear another will begin. About the last of the month the soil should be drawn up to the plant to shield and protect it and afford nutriment. When the plants have attained the height of six inches let them be supplied with sticks. The best method of sticking peas is to form a species of lattice work, by putting the sticks into the earth.

Potatoes.—Plant without delay.

Peppers, Red, may be sown on a warm border. When the plants have attained a sufficient size, they should be removed and planted out in rows about twelve inches apart.

Radish.—Sow at this season, where there is a warm, sunny exposure, and if it be desirable to have a constant supply, let the sowing be repeated every ten days.

Radish, Horse.—The best method of cultivating this is as follows: dig a deep trench eight to nine inches deep and fill the bottom with manure; cut the roots into small pieces about four inches long and drop them eight or ten inches apart. In five or six weeks the plants will make their appearance.

Salsify should be sown the last of the month in drills about an inch deep and twelve inches distant between the drills.

Tomatoes.—At this period sow in a hotbed, to forward the plants. When the plants have attained five or six inches height, they should be pricked up and set out in the bed, to prepare them for final transplanting to the open ground. They should be placed about six inches apart, and so soon as the weather becomes settled the plants should be removed to the position they are to occupy in the garden.

The *time* proper for the several operations above mentioned, will, of course, depend upon the season, as well as the *place*. The month of March, this year, has been unusually severe, and we may expect a late Spring.

The readers of the *Agriculturist* are spread over 7 degrees of latitude by 22 of longitude (from Sandwich to Cape Breton), and cultivate every variety of soil, under the most diversified conditions as to local position, exposure, &c. It is thus impossible to give

specific directions, especially as to *time*, which will be applicable to every case. Due allowances must be made on this account by the reader.

WORK IN THE ORCHARD.

A practical Gardener says:—All kinds of fruit trees should be pruned early. In doing this, remove all the inside shoots, as these absorb sap to no profit. The outer branches are the only ones that produce, and they will absorb all the juices which are drawn up from the roots of the tree. Whatever there is consumed by these useless appendages of the trees tend only to impoverish the fruit bearing branches. Judicious pruning not only improves the fruit, but causes the tree to bear earlier and prolongs its life and the period of fruitfulness. Thus a tree kept well pruned will bear double as long as one that is neglected. In pruning, the branches to be removed should be cut off close to the body of the tree, and the cut should be made smooth by a very sharp knife. This should never be neglected where the branches are more than one inch thick. Be careful to have the branches, so that one shall not cross another, and all with the extremities pointing upward. It is desirable in most cases that the scar made by the pruning-knife be covered with a composition, made of equal parts of beeswax and tallow or lard. This causes it to heal more readily.

Gooseberries.—The method generally pursued with gooseberries prevents anything like success in cultivating this delightful berry. The grand mistake is in the manner of propagation. Let any gardener follow the directions here submitted, and he will be astonished at the result. Gooseberries should be propagated from cuttings. Select wood of the growth of the last year. Make cuttings from six to eight inches long. Carefully pinch off all the eyes or buds from the bottom to within two inches of the top. Insert the cutting thus prepared in the earth, burying it up to the point to which the eyes were removed. Roots will put out wherever there was an eye, and the stocks will grow up clean and comely like a tree. It will not be troubled with suckers, and while much more ornamental than gooseberry bushes usually are, will produce much finer fruit. Those who adopt this plan will find the produce of their gooseberry nurseries very much improved. It remains to add, that gooseberries should be placed where they will have plenty of sunshine. They do not thrive well in the shade.

Currants.—The remarks concerning the propagation and cultivation of gooseberries are equally applicable to currants. They should be treated in precisely the same manner and have the like freedom of access to the rays of the sun.

Strawberries.—The beds should be well cleaned during this month from all litter and weeds, and the earth well loosened with the hoe. After this has been done the plant should be slightly covered over with wheat straw. The object of thus covering the strawberry plant is to keep the fruit from contact with the soil. Some persons erroneously suppose that litter is spread for the purpose of protection, Nothing of the kind is needed and the only good purpose subserved is that noted.

SPENT TAN FOR MULCHING TREES.

A correspondent of the *Plough, Loom, and Anvil*, says:—

"It may not be uninteresting to your readers to learn that spent tan spread on the surface of the ground, under a tree which has been recently transplanted, is one of the greatest protectors from drought. In the spring of 1853, we set a quantity of fruit trees in a gentleman's garden and fruit grounds. The soil was very dry and gravelly, and it was the common opinion that they would all die from the drought.

The ground was prepared for setting in our usual way, with the addition of loam to set the roots in. After setting the trees, the ground was covered to the distance of two feet from the tree with common sawdust. There was not one fruit tree that suffered from the drought; and last season many of them bore and ripened fruit.

We set on the same grounds, also, about fifteen rods of arbor vitæ hedge. We mulched them also, with sawdust, and there was not one failure.

Last June I set a quantity of arbor vitæ on a bank, close to a wall. I put about two shovels full of spent tan around each tree; and although they were set just as the dry season had commenced, not one of them died, although we did not water them.

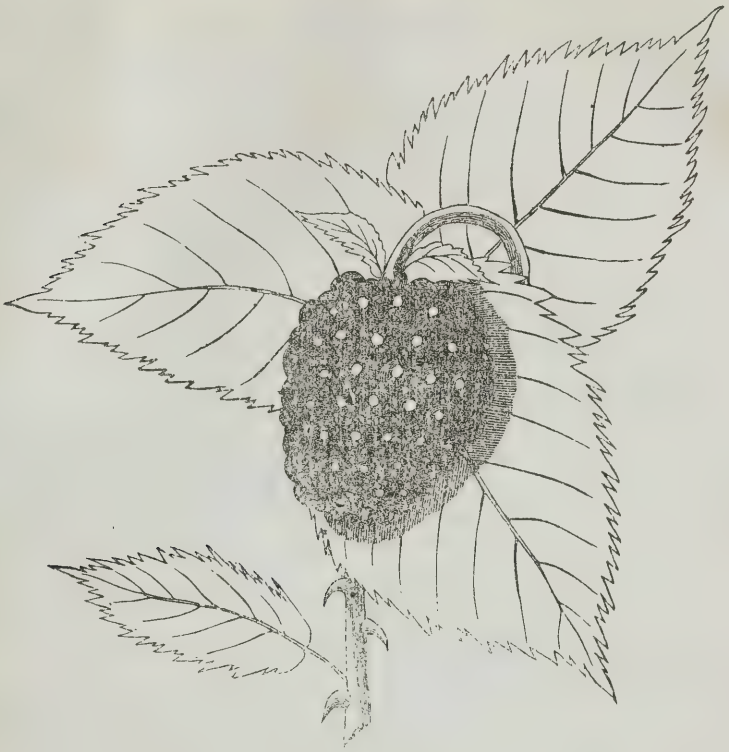
Villages are frequently built on alluvial soil, and then it is often extremely difficult to make trees flourish. Those who wish to ornament their gardens will find that a liberal supply of sawdust or spent tan added to the soil, either by mixing with it, or as a top dressing is very advantageous.

Either of the above substances, which are usually considered worthless, and can be had in abundance near all our villages, will many times pay the expense of hauling and applying. Adopt this treatment, and those trees which usually appear sickly at mid-summer, will be of a darker hue, and their broad leaves will shelter you from the scorching rays of a summer sun.

GRATING ROOTS FOR STOCK.

All modern experiments tend to prove that a much more economical use may be made of our root crops than has hitherto been generally practised. The first step has been the cutting up the roots by machines for feeding both cattle and sheep; and in the saving of food and the stock form the improved practice has been very great. More recently, machines for grating or reducing to a sort of pulp all the roots given to cattle have been introduced, and are rapidly coming into use. We have one at present employed, and the saving of roots is great. The plan we adopt is that described by the *North British Agriculturist* as in use in France and Belgium. It says:—

In France, we found that a practice lately adopted there and in Belgium, was coming rapidly into favor, viz., the grating down roots such as beet, and mixing them with cut straw and hay, and allowing the whole to set up an incipient fermentation for two or three days. The animals receiving such food make much greater progress than when the same proportion of food, and cut in the same manner, is given fresh to feeding stock. It is found advantageous to exclude the air as much as possible from the mass after it is mixed. The change which the grated roots and the straw and hay undergo is believed to be chemical, the sacharine principle being partially developed by the fermentation. If this French and Belgian practice is ascertained by experiments here to be founded on a sound basis, it will go to modify the Scottish system of feeding, in giving turnips with straw *ad libitum*.



THE LAWTON BLACKBERRY.

During the last two years we have seen in American journals frequent notices of a *new variety* of the Blackberry, which is said to have been found at New Rochelle, a town not far from New York, originally settled by the Huguenots. Mr. Lawton, a Wall Street Broker, claims the credit of bringing this new variety of the Blackberry into notice. He cultivates it somewhat extensively at his farm near New Rochelle, and is quite enthusiastic in its praise. The writer visited New York, a few days since, and had the pleasure of making Mr. Lawton's acquaintance. We found him at his office in Wall Street; but even amid the excitements of the Stock market he loved to talk of his Blackberry. He promised to send us a dozen plants as soon as they could be raised from the earth; and we hope to have the pleasure of introducing this new variety into Canada.

Mr. Downing, the distinguished Horticulturist, whose untimely loss in the *Henry Clay* will long be deplored by all lovers of the Garden and the Orchard, pronounced the Lawton Blackberry a valuable new fruit, one of the few he had seen that came fully up to the description given of it.

The following is Mr. Lawton's description of his Blackberry, and the proper mode of cultivating it:—

"This variety of the Blackberry is entirely new, differing in shape, size and quality, from any of which we have an account. As far as my experience extends, it will endure our severest winters without protection, and requires no particular care in the cultivation. The fruit is delicious, having few seeds in proportion to its size;—and in any locality, in good soil, the flower, leaf, stalk and fruit will grow of mammoth proportions; and in addition to all, is an abundant bearer.

Nature of the Plant.—It delights in moist soil and shade, and in such situation will continue longest in bearing. Like the raspberry, it produces from the roots, during the summer, a plentiful supply of shoots for bearing the ensuing season; while the old shoots, as the season advances, gradually cease to elaborate the sap and die, frequently before all the fruit upon them is matured. The fruiting season continues from five to eight weeks.

Management in the Spring.—Vigorous upright shoots with numerous laterals will be found mingled with the dead,—remove the latter as early as possible, and shorten the leading shoots one-quarter or one-third their length, and where the laterals are too long clip them also. If judiciously pruned they will require no support, and not being entangled they can be better approached to gather the fruit.

Planting.—They may be planted in the Spring

or Fall, four or five feet apart, in rows, and for the convenience of gathering the fruit the rows must be ten or twelve feet apart.

When the Plants are ordered, the ground should be prepared for their reception, so as to put them out as soon as possible after they are received; for if the roots are exposed to the air, so as to be dried or chilled they will perish. If received in the Autumn, a covering of light litter to the roots will retard the effect of the frost, and prove beneficial."

Mr. Lawton's price for plants is $10 per dozen, carefully packed and forwarded from New York. Orders may be left at this office.

Miscellaneous.

A REMEDY FOR SCROFULA.

Having lately seen with our own eyes, the application and effect of a newly found remedy for that terrible disease, CANCER, we are not disposed to dismiss every "cure" emanating from unprofessional sources with the ever-ready but not very logical objection—"quack."

We know that some of the most infallible remedies,—probably the majority of those known to and used by the profession,—have been discovered by non-professional persons, *i.e.* by "quacks." But let it not be supposed we underrate medical science, or favour *quackery*. Skill is better than ignorance in every art as well as in every science. But when a remedy *has been* discovered, no matter how or by whom, let not the professional man, in the fulness of his self-sufficiency, reject it without inquiry and without test.

Four or five summers ago we published in the *Agriculturist* a remedy for the fatal diarrhœa which then prevailed, and we had the satisfaction to receive several letters thanking us for the recipe, and declaring that it had saved several lives despaired of by the attendant physician.

We find the following in one of our most respectable agricultural exchanges. The remarks of the Editor (F. G. Ruffin, Esq., of the *Southern Planter*) in publishing Mr. Longworth's recipe, are sufficiently cautious. We do not advise any one to apply this "burning" cure rashly; but if they have been "attended for months" by the "best physicians without benefit" they will, perhaps, thank us for complying with Mr. Longworth's request:—

A CURE FOR SCROFULA.—Our friends of the faculty will bear witness that we rarely trespass on their domain by publishing "infallible recipes." We are afraid to do it. We know too well how *little* we know to tamper with life and health and feeling by such a course. Believing, religiously, in what a friend of ours calls "triumphs of medicine," AND in good nursing we generally pass by the ten thousand "cures" we see in the papers, sorry for those that cut them out, and grieving for the patients they are to be tried on. But scrofula is a privileged question, that is to say, any one is privileged to "discuss" it *if he can.*

Like the watch of the portly gentleman in the Pickwick Papers, at which every pickpocket in London had had a pull, thousands have tried their hands, ineffectually, on scrofula, and it has resisted with equal stubbornness the assaults of the quack and the "triumphs of medicine." Whether it is left for Mr. Longworth and Captain Harkness to extract it from the system by a final "cure," we, of course, cannot say.—*South. Planter.*

A CERTAIN CURE FOR SCROFULA.—Nicholas Longworth, the famous Millionaire and wine grower of Cincinnati, publishes the following cure for scrofula:

Put two ounces of aquafortis on a plate, on which you have two copper cents. Let it remain from 18 to 24 hours. Then add four ounces of clear strong vinegar. Put cents and all in a large mouthed bottle, and keep it corked. Begin by putting four drops in a teaspoonful of rain water, and apply it to the sore. Make the application three times a day, with a soft hair pencil, or made of rags. If very painful put in more water. As the sore heals apply it weaker.

I request editors in all parts of the Union, and abroad, to copy this, and to republish it quarter yearly as it may save many lives.

N. LONGWORTH.

Cincinnati, Ohio, Nov. 18, 1854.

P. S. Captain Harkness, of our city, the first person cured by this remedy, applied it without water, and he informed me that he thought it would burn his leg off; but the next day it was cured. His was a small sore, and had been attended for months by one of the best physicians, without any benefit.

VALUE OF PRINTING.—In 1274 the price of a small Bible neatly translated, was £30, a sum equal to at least £300 of our money. A good and clear printed Bible may now be had for two or three shillings. It is related that the building the two arches of London bridge cost only £15, which is £5 less than what a copy of the Bible sold for many years afterwards. These facts afford a curious commentary on the changes and advantages produced by the extraordinary invention of printing, which has done so much to alter all the institutions of the world wherever the press has appeared

FLOWER-POTS FOR ROOMS.—Fill a pot with coarse moss of any kind, in the same manner as it would be filled with earth, and place a cutting or seed in this moss; it will succeed admirably, especially with plants destined to ornament a drawing-room. In such a situation, plants grown in moss will thrive better than garden mould, and possess the very great advantage of not causing dirt by the water washing out of them when watered. Moss rammed into a pot, and subject to continual watering, is soon brought into a state of decomposition, when it becomes a very pure vegetable mould; and it is well known that very pure vegetable mould is the most proper of all materials for the growth of almost all kinds of plants. The moss would also not retain more moisture than precisely the quantity best adapted to the absorbent powers of the root, a condition which can scarcely be obtained with any certainty by the use of earth.

INVISIBLE CEMENT.—Isinglass, boiled in spirits of wine, will produce a fine, transparent cement, which will unite broken glass so as to render the fracture almost imperceptible and perfectly secure.

Editorial Notices.

EXPLANATORY.—In consequence of certain arrangements, by which the proprietor of this Journal will be able to devote more attention to its management than heretofore, it may be advisable, in order that no misunderstanding should occur in any quarter, to distinguish the contributions of Professor Buckland from those by other hands. His articles, therefore, will hereafter be known by the signature B.

RECIPROCITY.—We are glad to announce the final settlement of this long pending negotiation. The farmers of this country have now the *right* to sell their productions in the best markets they can find, or in the United States, as well as in their own country, without a deduction of 20 per cent. at the custom House. This will be found a considerable advantage, though we think it has been overrated. The price of land as well as its products, will no doubt be relatively higher, in consequence of this treaty, but extravagant anticipations should not be indulged, for they will not be realized. We shall have something further to say on this subject next month.

BUREAU OF AGRICULTURE.

We learn that the Minister of Agriculture, Sir A. McNab, has determined on improving and extending the operations of the Bureau; and with that view has appointed Wm Hutton, Esq., to the chief management. A better selection would be difficult to have made. Mr. Hutton has for some time ably discharged the duty of Secretary to the Board of statics, which is incorporated with the Bureau of Agriculture. His able reports have already favourably impressed the public mind at home in favour of Canada, and his long, practical acquaintance with both British and Canadian Agriculture must eminently qualify him for his new and important position. From Mr. Hutton's industry and literary ability, we have no doubt but he will frequently employ the press, as a means of disseminating valuable information.—*B.*

DOCUMENTS SUBMITTED BY THE BUREAU OF AGRICULTURE TO THE LEGISLATURE OF CANADA. Quebec, 1855.

This Blue Book contains a number of interesting and valuable reports, several of which we would like to consider in detail, did time and space permit. We fully intended to review Mr. Kirkwood's Report on Flax, but have been necessarily prevented It is a clearly arranged document, abounding in valuable practical information, and will repay a careful perusal. The illustration-cuts materially assist the reader in comprehending more accurately the verbal descriptions of preparing this important article for the market.

By the way, as Mr. Kirkwood has given most ample proof of his qualifications for dealing practically with the Flax and Hemp questions, which have now occupied some share of the attention of the public in Canada for several years; but we would like to see him placed in a position for effecting some tangible result. All know that flax and hemp are necessary things in Canada, and we pay annually a large sum for their importation. What we now particularly require is, that some competent person would make a beginning in showing us *how to grow and prepare for market these articles ourselves.* Mr. Kirkwood, we think, might thus be much more agreeably employed to himself, and far more beneficially to the public, than by occupying a subordinate situation in the Crown Land office. We hope the Bureau and Boards of Agriculture will shortly see to this.

The Hon. Malcolm Cameron's report is a short but valuable document, bearing sufficient internal evidence that the author was in earnest in the discharge of his duties, during the short period in which he presided over this new department. We think that we see indications of improvement in conducting the business, both of the Bureau and Boards of Agriculture, and that their joint action will yet be made more efficient in promoting those important objects which they severally contemplate.

We shall return to these Reports the earliest opportunity.—*B.*

SHORT-HORN STOCK.

We call the attention of our readers to Mr. Stone's advertisement in another page. The perseverance of that gentlman, under most discouraging circumstances at the commencement of his importations, is creditable to him, and worthy of the important work in which he is engaged. We earnestly trust that his praise-worthy enterprise will not fail in the end to be highly remunerative. We subjoin a letter which we have just received from John Harland Esq. who is capable in every respect of forming a correct judgement on the merits of Mr. Stone's services and of his herds:—

The Poplars, Guelph, March 22, 1855.

My Dear Sir,

I wrote some months ago to give you the particulars of the loss which my neighbour Mr. Stone, about that time sustained, by having a number of valuable cattle washed over board, in a violent gale of wind, whilst on the passage out from England.

I now write to inform you, and through your instrumentality, the public, that far from being discouraged by the disaster, Mr. Stone promptly sets about repairing it by making fresh importations, and has so far succeeded as to possess himself of about twenty purely bred 'short horns,' consisting of bulls, cows,

and heifers, amongst which may be found a combination of perfect symmetry with the most favourite blood that England can produce.

The introduction of this herd will prove a vast benefit to the Province, as it will afford a refreshing fountain from which to draw in cases of need: it would be a treat to most breeders to see it.

It will not I think be out of place to add here that Mr. Stone has long been celebrated for importing wine, brandy, ale and porter of highly approved brands.

I am, my dear Sir, truly yours,

JOHN HARLAND.

To Prof. Buckland, &c., &c.

DRAIN-PIPE MACHINE.

Mr. Charnock informs us that he has now succeeded in making arrangements with a mechanic in Hamilton for making his machines in efficiency and strength equal to what they are in England. Hitherto he has had to contend with great practical difficulties in these respects; but these difficulties appear now to have been overcome. The castings for the new iron machines are complete, and of sufficient strength to mould the very stiffest clay. Mr. Charnock says that he has received recently several enquiries about his machines from parties who are desirous of purchasing and that he has determined to make his terms as easy as possible. The want of good Drain-tile machines, manufactured in the Province, on reasonable terms, is unquestionably one of the greatest desiderata of our agriculture; and Mr. Charnock will richly deserve the liberal patronage of all who are interested in agricultural improvements, if he succeeds in supplying machines suited to public requirements.—*B.*

☞ For particulars see advertisements.

AGRICULTURAL SEEDS, &c.—We call the attention of our readers to Mr. Fleming's advertisement. His stock is extensive and carefully selected from the most respectable houses in England and Scotland; so that purchasers may rely on having a genuine article. Mr. Fleming is in the habit of testing his seeds as to their vitality before offering them for sale.—*B.*

Market Review.

CANADIAN, AMERICAN, ENGLISH, &c.

TORONTO MARKETS.

During the past month the markets in this city have fluctuated considerably. The English news was looked for with much anxiety; both buyers and sellers anticipating a *fall*, in case peace should be declared, or seem probable. The news of the death of the Czar brought the market to a stand-still for one day. Wheat was offered, but would not be taken at any *reasonable* price. In several cases farmers returned home with their loads. But next day prices nearly recovered their old position. The final settlement of the Reciprocity question has brought American buyers into our markets, who are willing to approach the New York rates more closely than usual.

The following are the Toronto quotations:—

March 31st, 1855.

	s	d		s	d
Flour—Best per bbl.	40	0	a	41	3
Barley, per bushel.	4	2	a	4	8
Oats, per bushel of 34lbs.	2	9	a	3	0
Pease, per bushel of 60lbs.	4	4	a	5	0
Timothy seed per bushel of 48lbs	8	9	a	15	0
Clover seed per bushel of 60lbs.	35	0	a	40	0
Hay per ton	70	0	a	140	0
Straw per ton	50	0	a	67	6
Firewood per cord	20	0	a	37	3
Beef per 100lbs	37	6	a	42	6
Pork per 100lbs	40	0			
Bacon per 100lbs.	40	0	a	45	0
Potatoes per bushel.	3	4	a	4	0
Turnips per bushel.	1	6	a	2	0
Onions per bushel.	6	3	a	7	6

NEW YORK MARKETS.

March, 31st.

Flour market firmer with good demand, sales 3,800 bbls at $9 12½ a 9 92½ for common to straight, and choice state at $8 50 a 9 94 for common to good Ohio and Michigan and Indiana; $11 50 a 13 for Genesee. Canadian, $9 50 a 10 75. Wheat firmer, sales 600 white southern at $2 35. Rye held at 135 a 137c; corn firm—sales 14,000, 99 a 100c for southern mixed white and yellow, and 100 for western mixed. Provisions—Pork firmer, sales 800 bbls at $14 50 a 14 62 for old, and $16 50 for new mess; $14 37 for new prime. Beef firm. Butter and cheese no change.

ENGLISH.

Our advices from England are as late as the 10th of March.

The Grain market continued to tend downwards, and very little business had been transacted in any of the markets. At Mark Lane, prices of Wheat declined 3s. to 4s; Hull, 5s; Leeds, 2s to 3s, and Newcastle 3s to 4s per quarter, and other towns in proportion. At Liverpool Wheat met only a limited enquiry, at a decline of 6d per 70lbs; Flour, 2s to 3s per barrel and sack; Indian Corn 1s 6d per quarter; Beans 1s per quarter, and Irish Oats 1d to 2d per bushel.

Provisions were dull, the arrivals of beef and pork being three times as great as at the same period last year. Holders were therefore looking for purchasers and prices were giving way.

The following are the Liverpool quotations of the 9th for Foreign grain and Flour. To make a comparison with prices here, convert the amount into pollars and cents at 24 cents to the shilling, and subtract a 7th.

WHEAT, per 70lbs.	s	d		s	d
Canadian, mixed and red.	10	8		11	4
white	11	6		12	0
United States, red	11	2		11	9
white	11	10		12	4
Danzig, high mixed	12	3		12	8
Pomranian and Mecklenberg	10	8		11	6
Stettin and Silesian, red	10	0		10	6
white	11	0		11	6

Danish, Holland and Friesland.	10	6	11	2
Hamburg	10	8	11	2
Odessa, Polish, red	10	0	10	6
common	9	10	10	2
Egyptian	7	8	8	4
BARLEY, 60lbs	3	10	4	8
OATS, Russian, per 45lbs	3	5	3	7
BEANS, European, per qr.	38	0	42	0
Egyptian, per 480lbs	36	0	37	0
PEAS, Baltic &c., white per qr	47	0	50	0
Canadian	42	0	47	0
INDIAN CORN, pr 480lb American wht.	42	0	43	0
yellow	41	0	41	6
INDIAN MEAL, per 196lbs	19	0	20	0
FLOUR, per barrel 196lbs Canadian, sweet	41	0	43	0
Western Canal, sweet	37	0	42	0
Prime Vir. and fancy brands	43	6	44	6
Ohio	43	6	44	6

LATER.—The steamer *Asia*, with dates to the 17th, —one week later,—arrived just before going to press. Breadstuffs were firm and prices had slightly advanced. Western Canal flour is quoted at 42s. per barrel.

LARGE SALE OF VERY SUPERIOR YOUNG HORSES AND CATTLE.

THE Subscriber has been instructed by GEO. P. DICKSON, Elgin Mills, Yonge Street, 17 Miles from Toronto, to offer by Public Auction without any reserve, on FRIDAY, the 13th day of APRIL next, the Superior Stock of Stud Horses, Brood Mares, Geldings Colts and Cattle, viz :

HORSES.

1. Young *Peelo*, 7 yrs. old, 16¼ hands high.
2. Young *Champion*, 3 yrs. old, 16 hands high—Dark Bay, was got by Old *Champion*, Dam by imported *Rainbow*.
3. A Dark Brown entire Colt, 2 yrs. old, by *Champion*, Dam a superior fast trotting Farm Mare.
4. A Dark Brown Gelding, 16½ hands high, 3 yrs. old his sire a Young *Sovereign*, Dam same as No. 3 and an excellent match.
5. A Bay Gelding, 3 yrs. old, 16½ hands high, Dam a fine *Rainbow* Mare.
6. A Bay Filly, 2 yrs. old, sired by *Champion*, Dam same as No. 5, and an excellent match.
7. A Chesnut Gelding, 3 yrs. old, very compact.
8. A Roan Brood Mare, 4 yrs. old, 16 hands high, in foal to *Governor*, was sired by *Champion*.
9. A Grey Filley, 3 yrs. old, 16 hands high, in foal to imported Young *Lion*, she was sired by *Champion*, and from a *Messenger* Mare.
10. A Grey Gelding, 5 yrs. old, 16½ hands high, heavy and active.
11. An Iron Grey Mare, 4 yrs. old, 16½ hands high, mate to No. 10.
12. A Dapple Grey Brood Mare, 8 yrs. old, in foal to *Governor*.
13. A Dark Iron Grey Filley, 3 yrs, old sire a Young *Sovereign*.
14. A Brood Mare, Bright Bay, 10 yrs. old, in foal by *Governor*, supposed to be sired by imported *Rainbow*.
15. A Chestnut Mare in foal to *Champion*.

CATTLE.

16. A pure-bred Durham Bull, *Admiral*, 2 yrs. old, sired by Mr. Jno. Dew's celebrated Bull.
17. A large Roan Durham Cow, 5 yrs. old, sired by Captain Boyd's, Bull and now in Calf by Young *Admiral*.
18. A large Red and White grade Durham Cow, 4 yrs. old, got by Mr. N. Davis' pure-bred Bull.
19. A Red grade Devon Heifer, 3 yrs. old, in Calf.
20. A Red and White Spotted Heifer, 2 yrs. old, in calf by *Admiral*.
21. A White Durham Heifer, 2 yrs. old, in Calf by *Admiral*.
22. A Roan Durham Steer, 4 yrs. old,
23. A Roan do do:

will make a strong and useful yoke of Cattle.

24. A Black and White Steer, 2 yrs. old.
25. V Red and White Steer, 2 yrs. old.

SALE TO COMMENCE AT TEN O'CLOCK FORENOON PRECISELY.

The above valuable Stock of Horses, having been raised by Mr. Dickson, (with one or two exceptions,) can be confidently recommended, as promising to be useful, hardy Horses, of all-work. All those over 2 years old have been in harness, and so far are kind and tractable. The Cattle are all excellent of their respective Breeds. The whole of which will be sold to make room for other young stock on hand and to arrive.

Terms,—For 'Peelo' and Young 'Champion,' one-fourth down, balance in 12 months, with interest, on approved Joint Notes: the remainder of the Stock 9 months Credit, on Joint Notes, to be approved of by the auctioneer and owner. Also immediately after the above are sold, will be offered between 50 and 60 excellent Ewes, the property of H. G. Bernard.

W. B. CREW,
Auctioneer.

Elgin Mills, Richmond Hill, March 22, 1855.

DURHAM BULLS.

THE SUBSCRIBER has several yearling Durham or Short-horn Bulls for sale from the most renowned breeds ever imported in this country. Parties wishing to purchase will please call.

P. FISHER.

Nelson, 25th Jan., 1855. 2-3

TO FARMERS, &c.

WANTED, A situation on a Farm, by an intelligent young man (whose desire it is to improve his health). Would have no objection to accept any healthy OUT-DOOR occupation, or engagement on a Steamer or Railway, or to travel. Has no objection to go to any part of the country.

Address "VENO," *Agriculturist* office, Toronto.

March 31, 1855. 4-1t

LAKE-VIEW NURSERY.

THE Subscriber offers for sale the present Spring, a very choice assortment, of Fruit and ornamental Trees, Flowering Shrubs, Roses, Dahlias, Green House, and bedding-out Plants, Fruit Tree Stocks, Hedge Plants, and a general assortment of Nursery Stuff. His Stock of Dwarf Fruit Trees, will be found very complete, bearing Trees of which can be furnished to order. Orders respectfully solicited.

☞ Descriptive Catalogues can be had on application.

JOHN GRAY

Lake-view Nurseries, Toronto, 1855.

ENGLISH CATTLE, SHEEP, SWINE.

SHORT Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

Fresh Garden, Field and Flower SEEDS!

THE subscriber beg to inform his numerous friends and the public generally, that his stock of FRESH SEEDS for spring sowing is now complete The Stock of

AGRICULTURAL AND GARDEN SEEDS

is well selected and extensive, and the purity and vitality of each sort is fully tested before offering them for sale, so that the public may safely calculate on being well served.

Agricultural Societies, Merchants, and Others can be supplied with complete assorments, neatly put up in papers or by weight, at very moderate prices

Catalogues of the Agricultural, Garden and Flower Seeds, with directions for preparing the ground and sowing the Seeds, can be had on application.

TWENTY packets of choice Flower Seeds will be sent free by post to any part of the Province, to the address of any party remitting $1, free of postage.

The subscriber would call the attention of his Agricultural friends to a portion of his stock, comprising—

Purple Top Swede Turnip	Spring Rape
Yellow Aberdeen do	Red Clover
Do Altringham do	White do
White Belgian Carrot	Orchard and other grasses
Long Orange do	Timothy (pure Seed)
Do Red Altringham do	White Marrowfat Peas
Do Red Mangel Wurtzel	Early and Late Field do
Yellow Globe do do	Seed Barley
Red do do do	Spring Wheat
White Sugar Beet	Common Oats
Field Parsnip	Spring Tares, &c.

Also, a fine lot of of EARLY FINE POTATOES, Early Shaw do, Early Gold Fenders, and several other varieties.

JAMES FLEMING,
Seedsman to the Agricultural Association Upper Canada.

Toronto, March 27, 1855. 4-15

IMPORTED, THOROUGH-BRED, SHORT HORN BULL.

MR. STONE, having one Bull more than the necessities of his own herd require, wishes to sell him He is four years old, is a good colour, possesses an untarnished pedigree, and is in every respect an unexceptionable animal

Guelph, March 20th, 1855.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having de-detemined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at Cobourg in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND. *Secretary.*

Office of the Board of Agriculture
Toronto, March, 1855.

SHORT-HORN BULLS.

R. WADE. Junior, of Cobourg has Five Young DURHAM BULLS for sale, and would be glad of a call from parties wishing to purchase.

Cobourg, January 1 1855. 1-3

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision

A man and three boys can turn out from 5,000 to 10,000 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - - - - - - - - - - - - - - - - £5 0 0
By the same Society, the following year as the best Machine of the day, - - - - - - - - - - - - - - - - - - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - - - - - - - - - - - - - - - - - - Silver Medal·
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,
Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

PURE-BRED ANIMALS.

AT PRIVATE SALE,

Mount Fordham Westchester Co., 11 miles from City Hall, New York, by Harlem Railroad.

HAVING completed the sale of animals, as advertised in Catalogue of 1854, (excepting Short Horned bull "*Balco*" 9918), at prices highly remunerative, for which patronage I feel grateful, not only to the public of almost every State in our Union, but to the Canadas, Cuba, and the Sandwich Islands; *I will issue about the 1st of April a Catalogue for* 1855, of short Horned Bulls, and Calves (some of which belong to my friend, and part associate Mr. N. J Becar) North Devon Bulls and Bull Calves, Southdown Rams, Suffolk, Berkshire, and Essex Swine, of almost all ages, and of both sex, now ready for delivery. This catalogue will be illustrated with portraits of my Prize Animals. Most of the original animals of my breeding establishment were selected by me in England in person, and strictly in referance to quality, *in my judgment*, best adapted for the use of this country.

L. G MORRIS

January 30th 1855.

FRUIT TREES, EVERGREENS, &c.

T. C. MAXWELL. & BROS., ask attention of those wishing *Trees* and *Nursery Articles* the coming spring, to a few *Thousands* each of *Apple, Cherry Standard* and *dwarf Pear Trees* and a good assortment of *Peach Plumb Apricot* and *Quince Trees*, and the *smaller fruits*. *All very thrifty and* HEALTHY.

25,000 Am Arbor Vitæ, two years in Nursery, fine plants for Hedges,
50,000 , .. " " " nicely rooted.
1 ,000 Baslsam Fir, 1 to 5 feet high.
30,000 Norway spruce, 1 to 2 feet high.
1,000 Hemlock, Red Ceder, &c,
2,000 Wet ash large and cheap, and large Horse Chesnut, &c.

The above and many other articles usually grown in the Nurseries, we offer in lots to suit purchasers CHEAP.

Digging and packing done in the best manner.

T. C. MAXWELL & BROS.

Old Castle Nurseries,
Geneva, Ontario Co, N.Y, 2-2

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THE

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Agriculture, &c.

TOWNSHIP OF YORK FARMERS' CLUB.

A meeting of the members of this Club was held at the Red Lion Inn, Yorkville, on Wednesday Evening, March 28th. R. Davis, Esq., Vice-President, occupied the chair. A larger number of members than usual were present. The subject for discussion was, THE FALLOWING OF LAND, which Professor Buckland introduced by an extemporaneous address, the substance only of which we can give in this place, and our notice of the long and interesting discussion which ensued must necessarily be very brief.

The Professor commenced by defining the process of fallowing, as practised in ancient and modern times, for the purpose of clearing the land of weeds, and by giving it a longer or shorter period of rest, to enable it to recruit its exhausted powers. The several kinds of fallow were then described: the *naked or bare fallow*, under which the land remains without any crop for a whole year, and subjected to repeated ploughing and harrowing; the *bastard fallow*, comprising a spring or early summer crop, such as rye, vetches, &c., after which the ground is thoroughly cultivated and prepared for fall wheat; and the *green crop fallow*, a striking feature in improved modern husbandry, the ground being well prepared in spring for root crops, such as potatoes, turnips, mangold-wortzel, &c., sown in drills, and the intervale regularly cultivated by horse or hand-power during the period of growth.

Fallowing is a very ancient practice, going back indeed to the earliest authentic records of cultivation It was in fact the principal means, up to a comparatively recent period, of restoring arable land from exhaustion induced by repeated cropping. Fallows were consequently had recourse to at regular and sometimes very frequent intervals; a practice which more or less continues in every part of the world at the present day. The ancient Jewish law required that the soil should remain at rest, without any crop whatever, every seventh year; an injunction which, whatever typical application it might have was well suited to renovate the exhausted soil of Palestine. The Romans invariably practised fallowing, and to them many modern nations owe the system, for wherever that powerful and enlightened people carried their conquering arms, their arts, including their agriculture, as well as general civilization followed. The Romans were accustomed to fallow every alternate year, so that only one half of their tillage land was in crop at the same time. It is a remarkable fact that the fallow was unknown in Scotland till the commencement of the last century, although long and extensively practised in England. The land being there laid out in long and narrow slips was unsuited to cross ploughing; a circumstance that must have materially retarded the introduction of fallowing and green crops. The introducer of the fallow system into Scotland was Mr. Walker of East Lothian, who had to endure for a time, as do most improvers, the ridicule and contempt of his neighbors; but in a few years the practice became general over large areas.

It should be borne in mind that till within a comparatively late period the naked fallow system was indiscriminately pursued upon every variety of soil. The introduction, however, of turnips and potatoes into field culture on light soils, during the latter part of the last century, particularly in Norfolk, naturally paved the way for the contraction of the bare fallow, which, in course of time, became restricted to the heavier class of soils. A strong controversy was for a long time carried on in the agricultural community between the advocates and impugners of the fallowing system, and the result appears to have been, as is frequently the case in all such debates, that a medium course was adopted The followers of the old system restricting naked fallow, as a general rule, to cold and wet clays; while their opponents achieved a great and most beneficial triumph in substituting the bastard fallow, or the culture of root crops in rows, on all the lighter descriptions of soil. The moderate clays and heavier loams were still undisposed of, discussion still continuing, and each party claiming them; till at length the introduction of underdraining as a means of improvement on the wetter and heavier lands, gradually prepared them for ranking among turnip and root growing soils; so that the naked fallow became at last restricted to the heavy clays, as at the present time.

The larger proportion of wheat raised in Upper Canada is after summer fallow, a practice no doubt, when not abused, the best adapted to the wants and

circumstances of the country. The process was too often slovenly conducted, so as to preclude the full benefits of the fallow, either in the extirpation of weeds, or the proper deepening and weathering of the soil by which, especially in dry lands, several insoluble manuring substances are brought into a fluid state so as to be available to the wants of the growing plant. It was a good practice to plough the ground deeply in the fall, to allow it to lie in a rough state through winter, exposing as large a surface as possible to the joint influences of the air and frost. The summer working should be deep and thorough, for in fallowing, as in most other agricultural operations the old adage holds true, that what is worth doing at all is worth doing well.

With regard to the long and keenly mooted question, whether the naked fallow ought to enter at all into the modern courses of an advancing husbandry, he (Professor B.) was of opinion that it had hitherto been too extensively and indiscriminately practised, and that upon all the lighter descriptions of soil, it might be beneficially dispensed with. On the clays, however, the fallow in some shape or other will always be found necessary every few years. It is the most effectual means of cleaning, loosening, and sweetening the soil, and has always been regarded as the mainstay of the clay-land farmer. It should, however, be resorted to only as a necessity, and not as occupying invariably any given year in a course of rotation. It is doubtless an expensive practice; involving the loss of a year's produce, and it adds nothing to the soil. When produce is low in price, the first crop after naked fallow seldom if ever pays expenses; but its benefits are usually felt through the whole subsequent course of the rotation. Fallowing acts upon the soil chemically as well as mechanically, and is a certain means, as all experience testifies, of bringing into activity the latent elements of fertility. Clays to which the practice of fallowing is chiefly restricted, always contain a greater or lesser amount of insoluble silicates of alumina and the alkalies. By repeated cultivation these manuring substances are exposed to the action of air and moisture, and as the soil becomes mechanically disintegrated, they combine in a solvent state, and become available as food for cultivated crops. As underdraining and thorough cultivation advance, naked fallows, even on the heavier soils, will become less frequent, and the growth of root-crops and row culture extended. This is evidently the natural tendency of a scientific and progressively advancing course of agriculture.

The CHAIRMAN expressed his agreement in the main with the statements and reasonings of Professor Buckland. The chief question to be decided was whether fallowing pays. He was of opinion that it did not; except occasionally on the heavy soils, infested with weeds. In the Township of York, except upon the stiffest lands, the naked fallow ought to be discarded.

Mr. LEE was of opinion that the summer fallow upon most of the soils of York Township was unnecessary. His farm was generally light, upon his peaty land he raised excellent oats, and found that fall wheat did better after a crop than a summer fallow. He highly approved of the row culture of root crops.

Mr. PALMER expressed himself decidedly in favor of extending and improving the cultivation of turnips, mangolds and especially carrots; and thought that we should look more to the quality of our cultivation than to its mere extent.

Mr. CHERRIMAN remarked that the summer fallow could not be altogether got rid of in this country, even on the lighter soils, as weeds were so remarkably quick in growth. The first thing was to keep the ground clean.

Mr. PLATER strongly argued for the necessity and utility of fallowing on the stiffer soils. His farm mainly consisted of a clay sub-soil, and although he could produce root crops, they could not be got off in sufficient time for fall wheat. He could usually get a heavy crop off the latter after a bare fallow.

Mr. ALCHIN, of Paris, said that on the light soils of the Counties of Brant and Dumfries the naked fallow was not generally necessary.

Mr. SAMPSON thought that the first step in good husbandry was deep and thorough working of the land, and that consequently improved implements were of primary necessity. He was an advocate of fallows; but they should be well done. In the State of New York exhausted arable land had been restored by deep ploughing and keeping down the weeds.

Although there was some difference of opinion in the meeting, it was obvious that nearly all were in favor of dispensing with bare fallows on the lighter soils. After a vote of thanks to Professor Buckland for his opening address, the Club adjourned.

GUELPH FARMERS' CLUB.

An adjourned Meeting of the Farmers' Club was held at the British Hotel, Guelph Friday week; Col. Saunders in the Chair.

The subject for discussion was that of "Manures," introduced by Mr. Charles Davidson, as follows:—

MR PRESIDENT AND GENTLEMEN,—In compliance with a request, made at the latest meeting of the Farmers' Club, that I would introduce the subject of MANURES, and their application: I am sorry it should have fallen upon me to bring before you a subject of such importance, for I freely confess I have neither the ability nor the experience necessary to do it justice, as I consider it one of the fundamental roots in the science and practice of Agriculture; and as you are mostly all aware that my calling has been other than that of a Farmer, for the last fifteen years, you will bear with me in the remarks I am about to make, as they are those chiefly drawn from my own experience, and that generally adopted in the West of Scotland, previous to my leaving it; and which, at the time, was considered best adapted to give satisfactory results.

But, as I have before remarked, I consider that, to do justice to such a subject, the aid of the pratical Agriculturist, in collecting, making, and applying the various articles which may be brought under the head of Manures, and their adaptation to the different soils; as, since the science of Chemistry has been applied to Agricultural purposes on an extensive scale, and the services of competent chemists secured to almost every Agricultural association in Britain, to aid and instruct the members thereof in ascertaining the wants of the different descriptions of soils within the bounds of such association, many errors have been rectified, and great improvements made.

I will, however, leave that part of the subject to be treated of by practical farmers; and not such as I—who may be termed a theoretical one—and will, therefore proceed to examine what may be understood as a Manure; and in answer thereto, I would state that I consider whatever is added to the soil to increase its fertility, and cause a great increase of

the fruits of the earth, to be a manure; and which may be classed under either of the following heads: viz., Animal, Vegetable, or Mineral.

Animal manures are chiefly those that consist of the excrements of animals.

Vegetable, that which is made by decomposing the vegetable productions of the earth; and

Mineral, those substances taken from the earth which by the action of fire or otherwise are made to stimulate the dormant particles of the soil with which they come in contact so as to put forth their fructifying effects for the good of the husbandman, such as gypsum, or plaster, lime, marl-ashes, &c.

I am, however, unable to give these their proper value, not being able to lay them before you in an analyzed state; but will proceed to take a plain practical view of them; and will commence with the most common manure to be found, but not on that account the less valuable, viz, Farm-yard dung.

It is, in general, a compound of both animal and vegetable matters, and one which I consider has more of those nutricious qualities necessary for the growth of plants, than any other description classed under the foregoing heads.

But, Mr President, manure must first be collected before it can, properly speaking, be made or applied; and here I would ask permission to glance at the arrangement of a farm steading, so that its construction may be most advantageous for the purpose of collecting manure.

Where such has been properby laid out, a cattle-yard, straw-yard, or dung-hill (whichsoever name it may be known by), will form a principal feature in its arrangement; and although there are many different plans adopted, yet that which seemed to be the most suitable for such a purpose was to place the premises in such a position that the dung hill would be so situate as easily to drain the wash from the stable and cow-sheds; but not in my opinion as some have supposed, that it should be in a hole, so as to retain all the moisture, unless it at the same time was roofed in, and guarded around the outside with a water-table, so as to prevent the heavy dashes of rain which occasionally fall, from running into it, and destroying many of its essential qualities. Such a practice, however, I do not approve of; and I would rather place it in a situation where the superfluous moisture might drain off, but which at the same time, would not be allowed to go to waste, (for I consider the wash richer than the soil.) A reservoir should be constructed at the lowest point, so as to collect all that might run off, with a pump and place in it, so that it might be again distributed over the heap, should the dung-hill or yard not be necessary, as what was voided by the cattle during the winter (which was the general practice adopted in my native country), then it would not be necessary, as what was voided by the cattle would be sufficient to keep it in a moist state. What has found its way into the reservoir could then be diluted with water, and used as top dressing—the advantages of which are surprising. I have no doubt some of you saw in the *Guelph Herald*, I think it was, quoted the other day from a Scotch paper, than an acre of Italian Rye-grass had yielded twenty tons of hay during the season, having been cut ten times, and after each cutting it got a top dressing of liquid manure. The comparative value of liquid manure to solids, I will glance at presently.

Many other methods were adopted, so as to apply the superfluous wash; some of these were to fill the reservoir with dry straw, so as to absorb the liquid, covering it over with peat or other porous earth, so as to determine the ammonia and prevent its escaping; and mixing such with other manures, or applying it by itself. At other times it was found beneficial in stopping too great a fermentation, from being poured over the dung-heap. Now, having collected the solid portions into a dung-heap, and the liquid into a reservoir, I will next endeavour to show what I conceive to be necessary to prepare it for use. But, Mr. President, before proceeding to this part of the subject, allow me a few minutes to contrast the system generally practised in this country, to that adopted at home, as previously explained; and I think you will agree with me that the system pursued here, in general, is a most injurious one to the farmer's stock, as well as to the manure.

Very little care apparantly is taken to keep the droppings of the cattle together, or have it mixed with vegetable matter, so as to preserve as much as possible the valuable portions of it from escaping by the air, or being washed away by the snows and rains of Spring. Oftener you find the cattle at liberty to range over a field or lane, of acres in extent, which is covered over with their droppings, exposed to all the changes of the seasons; which practice must appear, on the slightest reflection, ruinous to the farmer. I look upon it as so much money lost; as whatever reduces the quality makes the article inferior, and consequently of less value.

But to procceed to the preparation of mannres.

The fermenting of vegetable manures is a process I consider absolutely necessary in any country, but more especially in Canada; not only on account of its being necessary in producing immediate effects on the crops to which it is applied, but the ease with which it can be ploughed down; yet how often do we see farmers driving it out in its rough unmade state, immediately on the opening of the spring, or before the last ploughing for wheat, in the summer; and spreading it on the land, and ploughing it in. The first objection I would advance, would be the open state in which it leaves the land, which, if a hot season sets in after the seed is sown, must necessarily retard vegetation. But, sir, if it was considered essential to have it well fermented in Britain, before applying it, how much more so is it necessary to be done here, when we take into consideration, the quantity of noxious weeds to be met with, growing along every road and wood side, whose seeds when ripe are carried by the winds over the whole neighbourhood which spring up along with the crops, and are gathered in harvest along with the grain, and consequently find their way into the cattle-yards, and which, if not destroyed by fermentation, will come up stronger each year, being well saturated with the strength of the manure.

I have heard it argued that by applying it to land early in spring, which was intended for summer fallowing, preparatory to sowing with wheat, that they would spring up, and by using the cultivator they would be destroyed. Such a system might answer a good purpose with light annual seeds; but with those incased in pods, which frequently lie dormant for years, until the moisture and action of the air destroys their covering, when they germinate and make their appearance, much to the annoyance of the farmer, it convinces me still of the necessity of having the mannre well fermented before applying it.

The simplest way to effect which I have found to be to carry the manure, out to the field in the early part of the spring, in which it is intended to be used, and thus thrown by into a heap, which, if required for immediate use, the looser it is up the better, so

that fermentation may take place more rapidly and i be sooner decomposed and ready to apply ;but should it be intended to remain for any length of time before using it it, would be better to drive the teams over it, so that the fermentation might not be so rapid. In either case, the dung-heap ought to be brought as near to a point at the top as possible, so that should any heavy falls of rain take place, it might be run off, and a practice I have seen generally adopted was to cover the heap with peat or porous earth so as to determine the ammonia arising therefrom ; and here where plaster is easily obtained, occasionally scattering a quantity of it over it, would be superior from its retentive properties to the former. Plaster also can be beneficially applied where the stall feeding of cattle is followed. for every one knows that on cleaning out such houses, an effluvia of no very agreeable odour arises. which, by scattering a few handfuls of it over the floor, it is at once checked or retained by the plaster, and such also is its effects if scattered over a dung heap while undergoing the process of fermentation.

Having gotten it collected and properly made, the next step is to apply it.

That is a process all generally are acquainted with

The general practice wts to drill it in for green crops , either potatoes, turnips, or carrots. For the last it required to be as well decomposed as possible to effect it, so that the root might not be divided and run into what was called toes, but which description of manure, pidgeon dung, or such like being always preferred, if they could be obtained : yet, when these were not to be had, well fermented farm-yard dung was used. It is, however, a generally admitted fact that the more manure is fermented. the more its organic matter is lessened, yet the more speedily will its influence be felt on the crop to which it is applied ; and, although less in quantity, is better in quality. Another method was practised, when dung was collected during the summer ; when it was properly made, it was spread on the ground in the fall, where it was intended to plant potatoes in the Spring, and ploughed in so that it might incorporate with the soil, and at the same time save a vast amount of labor in the Spring, a system which I much approve of, as, by treating it in that way, the potatoes will be clear in the skin and free from scab ; which although of good quality, makes them unsightly to the eye, and lowers their value in the market. In applying it when turnips were intended to be grown, it was always put in drills, sometimes having a quantity of bone dust added to it. At other times it was applied to summer fallow, and ploughed in with the last furrow before sowing ; and in doing so, care should always be taken to cover it properly, as vegetable manures, more especially, have always a tendency to rise ; and, if exposed to the weather, lose much of their virtues.

Having now very imperfectly drawn your attention to Farm-yard manure, in its solid form. I would merely glance at it in its liquid form, which is far more valuable than what is generally understood.

I would take for instance, the urine of horses and cattle. I will give you the opinion of Henry Youle Hind, Esq , in preference to mine on this head—as stated in his lectures on Agricultural Chemistry—in which he states that Farmers are very anxious to obtain Guano at a great expense, yet what is Guano? but the excrements of birds. It is composed of various ingredients, together with acid in combination with ammonia. of which latter substance, guano contains from 7 to 17 per cent.. Canadian farmers (the states) would not think of purchasing guano, even if a supply were at hand. The price of $40 to $60 a ton, presents a great objection to its use as a manure, when a substitute of almost equal value is to be found in the urine escaping from our stables. He estimates that the urine and droppings of a full grown cow or horse contain a quantity of saline and mineral ingredients, exactly equal to the quantity of the same substances contained in the food consumed. In the solid excrements are found those large ingredients which. as they passed through the body of the animal, resisted the action of the fluids with which they came in contact. This somewhat singular statement will appear perfectly credible, when we consider that a full grown horse or cow consumes food for years together without increasing in weight : that is to say, the mean or average weight of a milch cow or working horse or ox is the same throughout a period of many years. Certain constituents of the food assume the form of muscle, bone. and blood, supplying the place of an equal amount of worn out and useless materials, which are discharged from the body in the urine.

The same author calculates that a horse voids 3 lbs of urine a day. From November to March he will void 450 lbs., which contains soluble solids as much as is contained in 200 lbs. of Guano. A cow voids 20 lbs. to 40 lbs a day ; and for the same length of time gives as much soluble solid as is equal to 500 lbs. of Guano.

Now, Mr. President, in looking at the above statement, from a party competent to make such a calculation, what must be the loss to the Farmers of Canada, whose cattle are allowed to wander up and down, as I before stated, in lanes, where their droppings, either of solids or liquids, are comparatively lost ?

I will next merely glance at green manuring such as ploughing down buckwheat, clover, and rape, (on the West coast of Scotland, we considered sea-weed, direct from the Sea, also a green manure) its effects being much the same as those first mentioned The general system adopted for those first named, was to get the land as well pulverized as possible ; and then to sow either as thickly as posible—that is buckwheat or rape, clover being sown the previous year, and ploughed down the next ; so that they might grow as rapidly as possible, thereby checking the growth of any weed that might show itself ; and when full grown and coming into bloom, roll it down with a good heavy roller, so that the plough might the more easily turn it under with the furrow, when its results would be seen in two ways: first, in cleaning the land of weeds, and second, in giving a good crop.

But the disadvantage in adopting such a course is that it has no lasting effect, the first crop being sufficient to exhaust all its strength ; and on that account it is seldom resorted to except when a supply of more permanent manure cannot easily be obtained.

Guano, I have no experience in applying ; but from the results, which we see in the Agricultural reports from Britain, its powers must be very great; and like Bone-dust, the small quantity applied to an acre, makes the cost of carriage so trifling, that it in a great measure, reduces the first cost of the article, when compared with the expense a tendant on carrying a quantity of Farm-yard dung any distance.

Bone-dust. in my time, was very generally used, for the raising of Turnips : the bones having been crushed by a mill for the purpose. it was to be had at most all ports on the coast and was well adapted for light loam or sandy soils ; and its effects were astonishing. As to its application, when carried to the field. it was applied sometimes alone, and at other

times along with other descriptions of manure. It was put in drills the same as other manures; but if used alone, the drills were not made so deep. I recollect when we sowed but five bushels per acre; but it was ultimately increased to ten and upwards. If other manure was applied in connection, about half and half,—say 15 tons of well-made manure, and six bushels of bones,—the bones were sown by a machine constructed for the purpose, which distributed them very regularly. They were then covered up, and the seed sown in the usual way.

I will now merely glance at the Mineral Manures as briefly as possible; as I have occupied your time too long already, in what you mostly all have had the practical experience of.

And the first I will notice is Gypsum or Plaster. As it is got in a prepared state, when received, I will not dwell on that part. Most of you are aware of its qualities, at least so far as its beneficial effects on grasses from top dressing are concerned; that being the general way in which it is applied; but it would also serve a good purpose to sow it pretty thickly over a manure heap, when undergoing the process of fermentation, as its principal quality is in fixing the ammonia, and not allowing it to escape. In applying it to crops, either as a top dressing, or sowing it along with the seeds, it has been recommended by the author formerly mentioned, to add its own weight of common salt, by which it affords a greater supply of soda to the roots of the plant, and thereby increases its growth. It also attracts and determines the ammonia from the air to the plant, which affords more nourishment than many would credit. In fact I have often heard it stated by parties, when speaking of the use of Plaster, that it would soon wear out the soil. I for one differ with such, as I consider, as I have already remarked, that it determines not only the ammonia in the soil to the plant, but also draws the same from the air. But as you have all had more experience of its use and application, I will leave it to others to further explain.

The next I will take up is Lime. You are all aware how it is prepared.

Its application requires greater care and judgement than any of the foregoing manures; for unless it is properly applied it will impoverish, rather than improve the soil. I beg to make a general remark here, than in speaking of applying it, I will look upon the land as all well drained; otherwise it is worse than useless to use lime.

In applying it, the Farmer has the following object in view; viz., to bring into action the dormant portions of the soil, by stimulating them to yield to the roots of plants that nourishment which it contains, but which, from its adhesive qualities, was kept locked up. It is like all other Mineral Manures, constantly descending, and therefore ought to be applied as near to the surface as practicable, having an entirely opposite tendency to Farm-yard manure, as that requires to be ploughed down as deeply as the soil will permit, for the latter will always work to the top, while the former will work to the bottom Hence the advantage in applying it, as a top dressing. It should never be put on in too great a quantity; in fact, the judgement of the Farmer is put to the test, having to take into consideration the soil he intends to operate on.

It can profitably be applied by mixing it with the weeds gathered off the fields, or the clearing out of ditches, &c., and formed into a heap by which it burns and destroys obnoxious weeds, and causes a valuable compost to be formed, which will greatly increase the productiveness of the soil to which it may be applied. Here I have had no experience in applying it, but have no doubt there are some here who have experimented with it, and who can give their practical experience.

There are other Mineral Manures, such as marl ashes, leached and unleached, but which, not having had much experience with their results I will leave to others, who have had more to explain.

And, Mr President and gentlemen, to conclude; I feel greatly obliged to you, for having had patience to listen to what I have advanced which I feel is but of small importance to a class of men such as the Farmers of the County of Wellington; but should I have opened the subject in such a way as will tend to the further elucidation of it from the parties present, I shall feel amply recompensed.

Some discussion ensued, during which the substance of the foregoing address was fully approved. Several members of the Club spoke in favour of the use of liquid manure, and the formation of suitable tanks in or near the barn yard. Mr McCrea also spoke in favour of the moderate use of lime, and described its beneficial action on land on which there was a superabundance of decaying vegetable matter; as well as on heavy clay soils. A vote of thanks having been given to Mr Davidson, for his able address, the Club adjourned for the season,—time of next meeting to be decided upon at the County Agricultural Show to be held in the Fall.

MR. McDOUGALL'S REPORT TO THE BUREAU OF AGRICULTURE.

(Continued from page 105.)

Analyses have been made of the surface and subsoil of Upper Canada, taken from a few localities, widely separated, but their practical value to the Agriculturist may be doubted, unless something more is done. The thorough and satisfactory manner in which the Geological Survey of the State of New York has been carried on, and the admitted practical advantages that have resulted from it to the intelligent Agriculturists of the State, induce me to recommend for your consideration whether it would not be more advantageous to the Province in every respect to increase the scientific corps under the direction of Mr. Logan, so as to complete the Survey of the settled parts of Canada, within a much shorter period, than will be practicable with his present force.

The subject seems to fall appropriately under your cognizance, as one of the means by which Agriculture may be largely aided.

It seems, moreover, a work, which to be useful, must be thorough, and therefore demands the generous help, and watchful supervision of Government.

Ditching Machines.—There is still a great desideratum in the operation of thorough draining, viz: a machine that will rapidly and inexpensively open the trench to a proper depth. Fowler's Draining Plough, as exhibited at the great Exibition of 1851, is an ingenious attempt to accomplish the object. This plough makes the orifice and deposits the tile at one operation, and without disturbing the soil. It leaves only a narrow slit in the earth as it passes along. A strong iron coulter with a plug large enough to open a space for the tiles, descends from a stout frame work placed on wheels, to the depth at which the tiles are to be laid, and is drawn from one side of the field to the other by a wire rope attached to a capstan. The tiles are threaded on a rope to the back of the plug. When the field is crossed the rope is detached from the plug,

and withdrawn, leaving the tiles in the orifice it had made, which completes the drain.

The objections to this machine are obvious.

1st. The difficulty of keeping the plug at a proper incline notwithstanding the irregularity of the surface. This is one of the points in which it is said to have been lately improved.

2nd. The liability to meet stones, or other obstructions in its course. This is an insuperable objection; and in Canada would I fear contract within very small limits the field of its operations. Every stoppage from such a cause would make it necessary to dig a hole in front of the plug, and remove the obstruction by hand, the horses and driver, &c., being in the meantime idle.

3rd. Liability of tiles to be broken. If a tile should split while being dragged along after the plug, it would leave the rope, choke the passage, and perhaps stop the machine. How in such a case is the point of obstruction to be ascertained? The rope on which the tiles are threaded like a necklace, is three or four feet under ground, and the distance from the side of the field where this necklace enters the earth may be 10 or 15 rods. As I have not seen the machine in operation, these observations are, of course suggested by the *modus operandi*. Perhaps English tiles are strong enough to sustain the pressure, but those I examined at Waterloo, Albany, and New York, would hardly endure the strain of such a process.

4th. The expense of the machine, and the expense of working it:—I have not at hand the means of ascertaining the cost of Fowler's Draining Plough in England, but judging from the amount and character of its machinery, it could not, in this country, cost less than £100 or perhaps £150: Two horses and three men if not more, are required to work it.

This would place it beyond the reach of the ordinary farmer, though I apprehend the question of cost would be met as in other cases if the other difficulties could be overcome. Parties would no doubt be found to undertake draining as a business, going from farm to farm.

A new ditching machine, was exibited at the Crystal Palace, but its merits were not very apparent. It was exibited by a Mr. Pratt of Canandaigua, New York, and will he asserts, cut 150 rods of ditch, two feet deep, in a day; it is drawn by a single span of horses. As the foot and a-half or two feet of clay, which, the inventor of this machine does not profess to move, is at the bottom of the difficulty and constitutes four-fifths of the expence of cutting a proper ditch, I did not consider the machine worthy of being recommended to your notice.

A draining plough has lately been introduced into Scotland, which is highly spoken of for cutting shallow drains.

It is thus described by the correspondent of an American Journal:—

"In the first place, a common plough is passed back and forth, turning a furrow out on each side. Then follows the draining plough which goes down from two to two and a half feet; the mould board being so constructed as to turn the earth all out. In this manner twelve acres in the vicinity of Stirling were drained with three ploughs in one day, the tile being laid in the furrow just as the plough left it.

The earth was returned to the ditch by means of a scraper in the form of the letter V, the legs of course protruding forward, and a team attached to each leg on each side of the ditch."

A machine that will cut a narrow ditch to the depth of three and a half or four feet, cheaply and expeditiously, leaving the bottom a proper incline independently of slight inequalities of surface, and that will not be seriously obstructed by stones, roots, &c., is a great desideratum, and when invented will be worth millions to agriculture.

By reducing the cost of this operation, which lies at the foundation of successful farming, even one-third, you would ensure its general introduction, and no man can calculate the value and importance of the results that would follow. I therefore recommend the offer of a considerable sum, say two hundred or two hundred and fifty pounds, as a premium to the inventor of such a machine.

The Crystal Palace contained some new and many improved implements and machines, of great practical value to the agriculturist, but I discovered none, besides those already mentioned, that seemed to come within the scope of my instructions.

A number of reapers were exhibited possessing various features, some adapted to rough and light crops, others to the level prairies, and abundant harvests of the west. A self-raking apparatus attached to one of these, excited much attention, and is certainly a most ingenious contrivance. The machinery by which the rake is operated is somewhat complicated, and therefore liable to derangement in unskilfull hands. The inventor is a Mr. Aitkins of Chicago, Illinois. I recommended the proprietor to send a machine to the Provincial Exhibition, and gave him the necessary information for the purpose. He promised to do so, and I had the pleasure of seeing it on the Hamilton fair-ground. I have reason to believe that a considerable number of these reapers will be introduced into Upper Canada before next harvest. In cases of this description government aid or interference is unnecessary. The enterprise of the manufacturer, or the necessities of the farmer, under the stimulus of high prices for labour and the products of labour, induce him to search out and call to his aid, new labour-saving machines, as soon as their utility is established. There were Threshing Machines, Fanning Mills, Grain Separators, Hay Presses, Ploughs, Straw-cutters, &c., and numerous other implements designed to facilitate the various operations of the farm, which well deserved the attention of the intelligent agriculturist; but as I saw nothing to warrant me in recommending any of these machines or implements to the special notice of the Bureau, or Boards of Agriculture, "with a view of their introduction into this Province," at the public expense; and as I was not authorized or expected to report on the Exhibition generally, I shall not offer any particular observations upon them. All those of real utility are either already known to Canadian farmers, or soon will be through the medium of our annual Provincial Exhibitions.

SEEDS, VEGETABLES, &c., &c.—Under this head, I beg to observe, that by a friendly correspondence between the Bureau and Patent Office at Washington, and between our boards of Agriculture and the State Agricultural Societies, an interchange of seeds, &c., could be secured that would put us promptly in possession of every new variety or newly discovered product of the Vegetable Kingdom, that may be introduced into the United States. I did not feel myself at liberty to open a communication with the Patent Office on this subject, as it was beyond my instructions. Having made the suggestion I leave the matter in your hands. The Secretary of the New York State Agricultural Society, B. P. Johnston Esq., whom I met at the Crystal Palace, expressed great willingness on behalf of the Society to reciprocate in all such matters with our Boards. The State

Society has established, at Albany, an Agricultural Museum which already contains a large collection of objects illustrative of the history, progress, and present condition of the art in that State. It is open to the public and is daily visited by persons interested in agriculture. Nearly all new inventions in agricultural mechanics, that have stood the test of experiment, may be seen here, either in the shape of working models, or, as is generally the case, in the shape in which they left the hands of the manufacturer. Fruits, seeds, grain, vegetables, of every variety, are collected, labelled, and, in such mode as may be practicable, preserved for exhibition. Mr. Johnston, who was present as the agent of New York State, at the World's Fair, London, brought from Europe on his return some forty varieties of wheat. These were distributed among the members of the Society in different parts of the State, for the purpose of being tested.

The results will be carefully noted. Mr. Johnston promised to collect and send to the Board of Agriculture, samples of those varieties which might prove to be valuable.

I may mention as a matter of some interest, and as indicating the probable advantages of the intercourse recommended, that Mr. Johnston received from a Russian gentleman, whose acquaintance he formed when in London, seed of a new variety of flax. It is represented to be a winter flax, and is expected to prove of great value especially in the Northern States. Its character and advantages are set forth as follows:

1st. "It has the advantage to be sown in the fall; not subject to be sown too early or too late, as this is often the case with the spring seed, and has always a failure of the crop in its train."

2nd. "The winter seed shoots sooner and before the weeds come out, which latter are kept back by it; it is earlier ripe and can be brought in before the hands are wanted for other agricultural operations."

3rd. "In order to prevent the shooting in the fall, the seed must be worked in by the ploughs as early as possible, and then the seed is not damaged, neither by 20 degrees of cold. (Reaumer.) In the spring as soon as the field is dry, it must be slightly harrowed. It shoots with the first rays of the warm sun, and is already in flower when other spring seed is sown, and before the insects can do it any harm."

4th. "This seed is glossy, but dark and mixed with black grains, yet all shoot. It is a great deal more oily than the common seed."

The seed of this flax was to be tested this present winter, and if Mr. Johnston's expectations are realized, it may be well worthy the attention of the Canadian flax grower.

At Rochester I procured and forwarded to Professor Buckland, 12 bushels of seed wheat, comprising the three varieties of most repute in Genesee Co.

This wheat has been sown on the experimental farm at Toronto.

PATENT LAWS.—During my examinations at the Crystal Palace, I came in contact with a number of American inventors, who complained loudly of our illiberality in granting patents for inventions. They accuse the Canadians of short-sightedness, as well as injustice, in not affording to American inventors encouragement and protection upon as favourable terms at least, as those accorded by their laws.

From the facts which came to my knowledge, during these enquiries, I am convinced, though formerly of a contrary opinion, that a change in our Patent Laws by which the inventors of valuable machines in the United States, could obtain the protection of a Patent in Canada for a short period, say 5 or 7 years would be the means of readily introducing numerous American inventions which under the present system are not introduced at all; or only by individuals who hearing of them by chance possess sufficient enterprise to become their own importers. It is now the interest of the American inventor, to keep as far away as possible from the Canadian frontier. If the character of his machine is such, that it cannot be 'pirated' manufactured in Canada, and clandestinely sold in the United States in violation of his patent, the produce of that machine may be imported in such quantities and at such prices as to reduce very much the value of his patent. Indeed, so common has this practice become in the case of wooden manufactures, that a bill was lately introduced, and (if my recollection serves me) passed by the New York Legislature, making contraband all manufactures proved to be the produce of Canadian copies of American inventions.

The difficulty of discrimination may prevent the effective operation of such a law, but the existence of a wrong which was felt, is proved by the attempt to remedy it.

It was probably supposed that by leaving the whole field of American discovery open to the enterprise of our machinists and manufacturers, they would hasten to appropriate every thing valuable for reproduction at home. But this expectation has not been realized. A considerable outlay is required to procure patterns, and make the necessary preparations for manufacturing heavy and valuable machines; and when a man's next neighbour may set up in the same business, and under-sell him the moment he has introduced and established the value of the article, it is very plain that the enterprise is attended with some risk.

The consequence is, that Canadian manufacturers have not shown the alacrity that was expected in "pirating" American inventions. In the case of cheap machines or implements adapted to common use, the evil is not so great; though even in regard to this class, I believe their introduction would be much facilitated by holding out inducements to the inventors to occupy the field themselves.

All foreigners are excluded from the benefit of our Patent Laws, while, "any person a subject of Her Majesty, and resident in this Province," may avail himself of their protection, not only for his own inventions, but for such as he "may have discovered or obtained a knowledge of" in foreign countries, except the "United States and Her Majesty's dominions."

A Canadian may obtain a patent in the United States upon the same terms as a citizen, except that he must pay a somewhat higher fee. So may an American obtain a patent in England. Why should we be less liberal? To profess a desire for "Reciprocity," while our Patent Laws are a standing proof of hostility to the principle, will not add to our reputation for consistency or honesty.

If, therefore, these laws expose us to the charge of inconsistency—if they display less international liberality than the patent laws of any other civilized country—if their effect be not to promote the prompt and general introduction of important new inventions but to obstruct and delay their introduction, it seems to me that no time should be lost in revising them.

I strongly recommend the subject to your notice, in the hope that you will agree with me in thinking that it demands the attention of the legislature.

I beg to conclude this report, the result of a short mission of twelve days, with the following *resume*:

1st. I recommend the abandonment of the idea which seems to have been entertained by your predecessor, if it be entertained by you, that the Minister and Boards of Agriculture should undertake the importation directly of animals, implements, or machines, except in those rare cases in which private enterprise has been found wholly inadequate; and in these rare cases, I apprehend the offer of premiums, provided they are sufficiently liberal, will be found the cheapest and most efficient means to achieve the desired result.

2nd. I recommend the abandonment of any special inducements or agencies, that may have been proposed or adopted, with the view of turning the attention of farmers in Upper Canada from their present crops to that of flax. I offer no opinion upon the propriety of special Governmental inducements in Lower Canada.

The offer of premiums, say £100 each, through the Boards of Agriculture, for the introduction and establishment in Upper and Lower Canada, respectively of a complete set of flax machinery, might lead to beneficial results; I therefore recommend the offer of such premiums.

3rd. I recommend that a sufficient sum be placed at the disposal of the Board of Agriculture, to enable it to secure, either by offering a sufficient premium, or by entering into a conditional agreement with some practical potter in the vicinity of Toronto, the immediate importation of Scragg's Tile Machine. The same aid should be extended to the Board for Lower Canada. Should it turn out that the machine of Mr. Charnock is capable of producing good tiles with rapidity, and at small expense, importation will of course be superseded. I may observe that numerous "improved" Tile Machines have been presented to the public within the last few years, but Scragg's, Clayton's, and Whitehead's appear to have maintained their supremacy.

4th. I recommend the offer of a liberal premium for the invention, or introduction of a Ditching Machine, the conditions being prescribed by the Board of Agriculture.

5th. I recommend that measures be taken to make the Geological Survey immediately useful to the agricultural interests of the Province. A better digested and more systematic arrangement of materials explained by diagrams, maps, &c., upon the same plan as the State Survey of New York, is what seems to be wanted

6th. I recommend that an immediate grant of £400 or £500 be made to each of the Boards of Agriculture, in order that they may begin the collection of materials to form the Agricultural Museums contemplated by the Act 16th Vic, cap. 2, sec. 16. I am not aware that any step has yet been taken to establish these museums, owing, I presume, to a want of means by the Boards. The manufacturers of implements would, in most cases, supply samples gratuitously, as they would be repaid by the publicity thus secured. The collection of grains, seeds, &c., and the testing of their qualities under the direction of the Boards, would be productive of important results. No one can visit the museum at Albany without perceiving at once its great utility.

7th. I recommend an amendment of the Patent Laws, so that foreign inventors may obtain a limited protection in Canada on complying with certain conditions; one of which should be the establishment of a manufactory or depot in the Province, where the invention could be purchased.

There are other points, some of them of as much importance to the cause of agricultural improvement as any I have yet mentioned, which I should have been glad to submit for your consideration, but they do not come strictly within the scope of Mr. Cameron's letter. The Experimental Farm at Toronto is in an unsatisfactory state for want of means, and from uncertainty as to the ultimate disposition of the University grounds which have been assigned for the purpose.

Unless more decisive and thorough measures are speedily adopted, the whole project will miscarry, and not the least of the evils to be apprehended from its failure is the prejudice it will excite in the public mind against all scientific demonstration in the art of agriculture.

Having taken a deep interest in the organization of the Bureau and Boards of Agriculture, and having been honored by your predecessor with frequent consultations in the preparation of the Agricultural Act, I have felt the more freedom in offering suggestions and recommendations as to general conduct and principles, rather than specific measures.

Without attempting to enumerate the various implements, &c., which I consider adapted to Canada, I have endeavoured to ascertain what action by your department and the Boards of Agriculture in promoting their introduction into this Province, would be likely to ensure success, and to point it out.

I have the honour to remain,

Your humble servant,

WILLIAM McDOUGALL.

Toronto, December 1853.

ADULTERATION OF GUANO.

There are few victories more dearly bought than a good bargain; there are no dangers against which it is more necessary to re-echo so continual a caution. Down even from the days of Troy, when Glaucus changed away his golden suit, to the time when Moses brought his gross of spectacles, and the countryman tried his dozen of razors, it has been still the same. Despite the oft-solicited interference of "the presiding magistrate," ladies are found yet to essay on the great sacrifice of Oxford-street. Wonderful backs, sold only because their owners have no further use for them, are still to be ferreted out of curious corners, by clever people only too anxious to get "a bargain." Flash auctions, sham smugglers, and too accommodating bankruptcies, all pander most profitably to this weakness of the English people.

None, as we have often had occasion to tell him, has more need to beware of a bargain than the agriculturist, as none, in the exercise of his vocation, may gain one at a greater cost. It would be difficult to calculate how often or in how many different ways, has this been impressed upon him. In the purchase of certain articles necessary for the business of the farm, the cheap must be the bad There can be no doubt at all about it. The more and more you examine the real bearings of the case, the more you will become convinced how utterly impossible it is to *honestly* undersell the market. For the benefit, however, of him to whose well doing our labours are chiefly directed, we may venture to tell the following story, founded, as it will be seen, strictly on facts:—

Situated at the extreme north of the Isle of Anglesey, is a spot known as the Paris Mountain. To the miner and geologist this, it is hardly necessary to add, has long been an object of interest as well as

of profit. Rich in copper and other mineral, "streams of yellow ochre," says a local authority, "flow down the gullies of the mountain-side to the river port and sea." Some years since, we are further informed "these streams were dammed up, or impounded by those through whose property they flowed, with the view of extracting the pigment by evaporation or other processes." The experiment was successful enough, for the cream of this skimming, we learn, "formed a valuable article of commerce;" while on the other hand "the residuum was worthless, lying in lumps, an eyesore and a nuisance." The spirit of sanitory improvement, however, has reached even North Wales. The lesson now commonly taught us, that something may be got out of everything, was put into very sharp practice even in so remote a district, and an example afforded to many a more assuming locality. The inhabitants of the marketown of Amlwch, lying at the foot of the mountain, and of course the chief sufferers from the nuisance, had of late been agreeably surprised by noticing with what care and uninterrupted dilligence this "residum" was collected and removed. The curious could only further ascertain that it was shipped for Liverpool, where it mysteriously disappeared. To what purpose it was to be applied no one could imagine, although no doubt in the some way or other to further illustrate the now very popular theory—

"There is something to be got out of everything."

Having at any rate run the drag of this residuum as far as Liverpool, where we came to a long check, let us now return into Wales. We diverge from our route a trifle, and find ourselves at length in the ancient and curious old city of Chester. Here we meet with one Mr. Pickering, an honest Cheshire yeoman, who, like another Moses Primrose, is changing his famous Cheshire cheese for Peruvian guano, with a certain Mr. Thomas. The great inducement to this is, as a matter of course, "a bargain." Mr. Thomas tells his friend, confidentially, that he purchased the guano a bargain from Messrs. Gibbs & Co. during the winter—that he had made an excellent speculation of it—and that he could sell it, comparatively as he had bought it, *cheap*. This was enough for Mr. Pickering; he buys a ton, and, like poor Moses, directly he has it home he begins to suspect the wisdom of his contract. The symptoms are certainly alarming, and he sends at last for a doctor. This is Mr. Hewson, the analytical chemist of Liverpool. By this gentleman's powers of testing the truth, Mr. Thomas's Peruvian guano is discovered to be only half what it was represented to be. It is adulterated to the extent of fifty per cent., the other half being sand, gypsum, and ochrey clay—in a word, chiefly that "residuum" which in the first place so annoyed, and afterwards so perplexed, the good people of Almwch.

Mr. Thomas, the defendant, as a dealer in this stuff was strong enough in his own innocence to enter the witness-box, and submit to all the complimentary interrogatories of a cross-examination. His answer on his defence came very straight to the point. He had not sold this manufacture as *genuine* guano—he never warrented it as such; he offered it merely as *Peruvian* guano. Let our readers in their future dealings remember to bear in mind so nice a distinction; and, once more, let them be cautious over a bargain. The price of a horse is now received in our courts more or less as his warranty. It may come to be the same with the price of guano, and that when people buy at a low figure, they must understand that they buy at a risk. The judge, indeed, in this very case summed up chiefly on the question of warranty. There was little defence as to the character of the manure; but what could be expected at the price? Mr. Pickering, to be sure, after an immense deal of trouble and anxiety, got his money back again, and lost his crop! With this moral to the agricultural community, may we leave our history of how the Cheshire farmer followed out the *permutatio Glauci*, and swopped away his good cheese for bad guano. —*The Farmers Magazine.*

On Diminishing the Quantity of Roots Used in Fattening Cattle.

BY CHARLES LAWRENCE.

(*From the Journal of the Royal Agricultural Society of England.*)

The feeding of bullocks has been of late much discussed in the agricultural journals and elswhere. it is singular that such a variety of opinion, such a diversity of practice, and so great a difference in expense, should exist at the present day on a subject of every year's experience from time immemorial, and that by thousands of agriculturists. Amongst an eminently practical people, as we are reputed to be, it would have been a natural presumption that the mode and cost of feeding a bullock in the shortest time, and on the most economical plan, would be as well established as any proposition whatever: the only deviation being the time required for the operation; and this would depend on the age, the breed, and the condition of the animal put up. Had this been the occupation of the merchant or manufacturer, instead of the farmer, such a discrepency would not have existed at this day. Hitherto, exact experiment, carefully noting weight, measure, cost of food, &c., has not been an attribute of the farmer. Such alone will furnish a sound foundation for reliable practice, for which Mr. Lawes has set us an admirable example.

I will presently give some particulars of the feeding of some bullocks last winter; but my immediate object is to repeat a protest I have made from time to time against the prevailing practice of giving to feeding animals a very large quantity of roots daily, and that in a neat state. When I commenced feeding bullocks, some years ago' I depende mainly on the experience of others, and was in the habit of noting down the allowances of the different kinds of food recommended in the agricultural periodicals, and otherwise, by men of reputed authority in such matters. The quantity of roots recommended I have observed to be from 1 to 1½ cwt. per diem, and for large bullocks even up to 2 cwt., and that without admixture.

Now, what is the object we propose to accomplish? It may be assumed for our present purpose we are dealing with animals at maturity in point of growth, that the skeleton is fully developed, and that we have only to accumulate flesh and fat. The first consideration would seem to be, what is the food which, at the least cost, contains the largest proportion of those elements which build up the muscle and fat, and is at the same time palatable to the animal. General experience points to the various roots grown on the farm as best fulfilling the latter condition; but when it is borne in mind they contain on an average somewhere about 88 per cent. of water, the next point for consideration is how we can combine with this quantity of fluid as much solid food of an ordinary kind [whether hay, straw or chaff] as may be requisite, having reference to the capacity of the stomach, and that degree of healthy action which is essential to the due assimiliation of the more nutricious por-

tions of the food. It must ever be borne in mind that it is not the quantiy of food put into the stomach of the animal which accomplished the object in view, but that which is thoroughly digested and assimilated by the healthy action of the viscera. When animals are in a state of rest, and consuming food so mixed, I have observed that, with water constantly before them, they take very little, unless the more nutritious food, superadded be of a heating nature, such as pea or bean meal in too large a portion; the safest course is to combine crushed linseed with those articles. Such considerations led me to doubt the expediency of making the chief food of fattening animals that, nine-teenths of which consists of water, and more especially unmixed with more solid food. The setting before a bullock half a cwt. of neat roots the first thing in the morning, some hours afterwards their allowance of more solid and nuturions food, and repeating the feed of roots in the evening, appeared to be an irrational proceeding; and, on the other hand, that a due admixture of the solid and fluid foods would probably aid the proper digestion of each. I resolved therefore to diminish the quantity of roots which I had generally heard recommended to one half—viz., from 70lbs. to 80lbs. per diem, according to the size of the animal, and to give a portion of these with each feed, as intimately incorporated as might be practicable with the more solid food. With this view I obtained Moody's Cutter, now sold by Carson of Warminister, which cuts the roots into thin ribbands; these we turn over amongst the chaff, so that the animals cannot avoid eating them together.

I have for some time directed the attention of some of the agricultural implement makers to the want of a pulping-machine, in order to effect a still more intimate incorporation of the dried food with the roots for which a prize has lately been offered by the Royal Agricultural Society. Such an article was produced at Lincolin, by Mr. Phillips, of Downham. This is an effective machine, at 11 guineas. It cannot probably be rendered, as at present constructed, at a less cost; but while the cost of Moody's Cutter is only £4 10s, a machine for pulping must be produced at much less cost than 11 guineas before it will get into the farmers hands.

I observe that the animals, under the change to which I have adverted throve faster, and were kept equally clean with one-third less litter, by weight than we had found necessary on the former mode of feeding.

In the month of August, 1853, our swedes and mangold were struck with some kind of blight, or other not very well defined malady, which nearly stopped their gallant growth, and we were reduced to the alternative of selling some of the stock, or putting the whole on short allowance of roots, and we adopted the latter. We limited the bullocks to 50lbs. weight, and the sheep to 10lbs. per head per diem. We had plenty of good barley straw, but the hay was very indifferent, having been exposed for several weeks to rain, and put up at last in questionable condition.

I purchased seventeen bullocks at the October Hertford fair. For the first four weeks they had little else than the barley straw and bad hay cut into chaff, with their 50lbs. of roots. From that time till they were sold they had 6lbs. of linseed and rapecake mixed in equal proportions and boiled, and the soup poured over the chaff, which was completely absorbed. This destroyed the fungus or mould which had accumulated on the damp hay, and render it perfectly sweet, but of course could not restore the nutriment washed out by rain. The linseed and rapecake together averaged £8 per ton; the cost of this, therefore, was 2s. 7½d. per head per week. The attendance I put at 6d. per head per week [a man and a boy, at 18s. managed in all respects 24 bullocks, 24 fatting hogs, and the store pigs]; the chaff, 2s. 4d. per head per week; the roots [estimated at 10s. per ton] 1s. 8d. Say, for the first four weeks the cost was 5s. per head per week; and for the next thirteen weeks 6s. 10., when the animals were sold. The account stands thus:—

17 bullocks, prime cost				£282	17	6
Feeding 4 weeks, at 5s.	£17	0	0			
" 13 " at 6s. 10d.	76	1	0			
				93	1	0
				£379	18	6

The were sold for £386 10.

The credit balance of £6 11s. 6d. would be absorbed by the engine-power in cutting the chaff; and the manure represents the straw cut for litter.

The result, I think, shows that bullocks may be fatted, in a reasonable time, at a less cost, and with a much less quantity of roots than are usually given, by the mode of feeding adopted, without actual loss. I may observe, too, in reference to this particular case, that, though beef during the year 1853 bore a good price, lean stock commanded a much higher proportional price in the market.

Cirencester. August 9, 1854.

ON THE CULTIVATION OF FLAX & HEMP.

Flax may be considered as a staple commodity in Flanders; it employs a great portion of the population, is exported in large quantities, and the cultivation and preparing of it is most perfectly understood there. It may be raised in various soils, but its quality depends much on the land chosen for its cultivation, and on the tillage and manuring. Its roots sink deep where it has room, and it is generally said, that the roots of good flax should strike into the soil to a depth equal to half the length, at least, of the stem above the ground. The soil most proper for this plant, if there is a choice, is a deep, rich, friable loam, neither too dry in summer nor wet in winter—in short, the best and deepest soil that can be found; but, as this is scarcely ever to be obtained to any great extent, art and labour must supply the deficiency of nature; and trenching, working, and manuring must create a deep soil, and enrich it. A porous sub-soil, or one that is well drained, is essential. In a course or rotation, in which flax enters as a principal crop, the whole management of the land should have a reference to the flax to be raised. In the three tables of rotations which we have given on the authority of Mr. Van Aelbroek, it may be observed, that each begins with flax and ends with flax; and there is no doubt that the arrangement of the crops is much influenced by the preparation of the soil required to

bear a good crop of flax at the end of the course. For this purpose a surplus of tillage and manure is given to each crop, so that the soil is deepened and ameliorated at each successive step, and is brought to as perfect a state as it will admit of by the time the turn comes to sow flax. This may remove the surprise which is naturally excited by amount of tillage and manure given to each crop, which appears, at first sight, far greater than can be required The quantity of liquid manure poured over the light lands year after year, cannot fail to make them rich, and the frequent trenching with the spade, must, in the end, transform the whole soil, to a considerable depth, into a compost of rich vegetable and animal matter, intimately mixed with the natural earths. It is, in fact, an accumulation of humus, which is the best preparation to ensure a good crop of flax. It is not, therefore, to the immediate preparation of the soil for the flax, that its abundance or good quality is to be chiefly ascribed, but to a gradual system of amelioration, which has brought the soil into the high condition required for this plant.

The finest flax is raised in the neighbourhood of Courtray, where the soil is naturally of such a quality as flax requires. In other districts the soil requires more care and culture to make it produce anything approaching to the quality of the Courtray flax. In some, as in the Waes country, and more especially in the neighbourhood of Ghent, no exertions or manuring can produce flax which will bear comparison with the best; but they produce very good crops, notwithstanding, of a moderate quality; and they find it a profitable crop, which to the farmers is always an important point. If it were not for a course, continual improvements of the soil, they never could raise such flax as they now produce; nor would any soil or quantity of manure, put into the land at the time the flax is sown, produce so large or so good a crop as will grow in land gradually and properly prepared. It is necessary to premise this, in order to prevent disappointment when attempts are made to imitate the Flemish methods. If ans one will follow the whole course on a similar soil, the result will be probably the same.

The crops which immediately precede flax in light soils, are barley, or rye, with turnips after them the same year. In this case these crops are more highly manured than usual; and the turnips have a double quality of liquid manure. About Christmas the turnips being taken off, the land is ploughed into high ridges, and the intervals dug out: it remains in that state secure from wet and exposed to the winter's frost. As soon in spring as the weather permits, the land is again ploughed and well harrowed, to let the seeds of annual weeds vegetate. A month after, another deep ploughing and harrowing are given to bring it into good tilth, and clean it well. Peat ashes are now put on at the rate of thirty bushels to the acre, and these are spread and harrowed in: a few days after ten hogsheads of strong liquid manure—the emptyings of privies preferred—is poured regularly over; and thus it is left for a week or ten days, that the manure may soak in. The seed is then sown: the quantity varies; but is always very abundant—160 lbs. are generally sown on an acre. The seed is slightly covered by a bush harrow, or the traineau drawn over the land: more than half-an-inch of earth over it would prevent its vegetating. Cloudy or showery weather is chosen for sowing it, as a very hot and dry air might also prevent its raising. The best seed is imported from Riga. The first crop of seed raised from the Riga seed is sometimes used; but it is supposed to degenerate fast; and the home-raised seed is said to produce coarse branched flax. This, however, is maintained by others to be a mere prejudice; and it is recommended to sow a spot thinly, and give the plants room to grow and perfect their seed. The flax of these plants will be much inferior; but the seed will be good and plump, and equal to the Riga seed for sowing. The question arises still, which is the cheapest method, to raise seed thus, or to import it? This is a matter of simple calculation; and we must leave the flax growers to decide it.

About Courtray the method is somewhat varied, the flax is sown earlier: the soil being peculiarly suited to this crop—less preparation is required. The preceding crop, which is frequently colza or oats, receives a double portion of manure; some very rotten dung is ploughed in with the stubble, and is completely decomposed during the winter. Early in spring the ground is ploughed and harrowed across; liquid manure is poured on as before, and the seed is sown. The quantity and nature of the manure depends on the state of the soil as to fertility, especial care being taken that no hot dung be used, and nothing which by any chance can increase weeds. Rape cake, dissolved in urine, or ground to a powder, is a favourite manure. Six hundred to one thousand rape cakes, and one thousand gallons of urine, are often put on an acre of land on which flax is to be sown. It is an essential condition, that previous to the sowing of the

flax-seed the land be quite clean and free from weeds.

Clover-seed or carrots are often sown amongst the flax; but many careful cultivators allow of no mixture, or anything to divide the juices of the soil with the flax. It is evident, that in ground so highly manured, the carrots or clover cannot fail to grow well; but they are weeds as regards the flax, and, therefore, it is thought, that they should not be allowed to grow amongst it.

The next operation is to weed the flax, as soon as it is a few inches high, and can be readily distinguished from the weeds. This is done by women and children who, from custom delight in the work: they go in parties, and generally work cheerfully together; with coarse cloths tied round their knees they creep along on all fours, which injures the young plants less than if they walked; they go against the wind, in order that the plants, which are laid flat by their creeping over them, may be blown up again into an erect position as soon as they have passed over. This proves what minute attention is paid to every circumstance which can possibly affect the crop. When the ground is quite clean, and the flax is grown to a good height, preparations are made for pulling it, The fibre is in the best state before the seed is quite ripe, and if this alone were the object, the flax should be pulled without waiting the seed to ripen; but then the seed is valuable for the oil it contains, and forms an important item in the value of the crop. These advantages are to be balanced; and flax is generally allowed to stand till most of the seed is ripe, or nearly so. Much judgement is required to ascertain the exact time, when there is a maximum of value, and each grower solves this problem for himself.

When the flax is pulled it is laid on the ground in small parcels to dry. As soon as the capsules which contains the seed become dry, and break readily on being pressed between the finger and thumb, they are taken off by drawing the flax through a rippling machine, which is a kind of comb with blunt iron teeth, which separates the capsules from the stalk: and they are saved in bags or baskets. The flax deprived of its seed is now tied in small bundles, and in some places immediately put into water to steep; but about Courtray, where every process is carried on in the greatest perfection, and where steeping flax is a distinct trade, the flax is placed upright in rows as soon as it is pulled, and the root end spread out, and the tops resting against each other in the form of the letter A, or the rafters in a roof; they do this so skilfully that the rain has little effect upon it, and, unless it blows very hard, the wind will not overturn it. In a week or ten days, if the weather is dry, it is collected into thick bundles of 8 or 10 lbs weight each, and firmly tied. In this state it is stacked in the field, or deposited in a barn. The seed is beaten out at leisure in winter, and the flax is not steeped till the May after.

The method of steeping is the same at whatever time it be done, and the following is the common process:—

A piece of water is over which alders grow, is chosen in preference, as the leaves of that tree steeped in the water give the flax a peculiar tint, which is thought desirable; or if such a place is not at hand, alder leaves are sometimes tied up in the bundles of flax. It is thought that the alder leaves also drive away insects, which injure the fibre of the flax while steeping. The best and most experienced steepers, however, disregard these notions, and prefer the clear, soft water of the river Lys, which they confine in long ponds made for the purpose along the side of the river, of such a depth that the flax may stand nearly upright in them without touching the bottom. This requires a depth of five feet or more. If they cannot be made so deep, the flax must be placed in a slanting position in the water, the root end lowermost and the upper end a little under the water. It is kept in this position by means of mats placed over it; and poles with stones placed on them keep the mats down and the whole under water. If the steeping takes place in August, the fibres will be sufficiently loosened from the woody parts of the stem in a week. In October it will take double that time, more or less, according to the temperature. The warmer the air is the sooner the flax will be steeped. In May it takes somewhat less time than in October, and the flax steeped then comes out of a lighter colour than that which is steeped while green.

Some steepers tie the bundles together in pairs, the root end of one to the seed end of the other, so that half the flax leans upwards in the water and half downwards; but there seems no good reason for this practice, for, as the root end is sooner steeped than the upper, it will be unequally steeped, even if the flax be laid horizontally in the water, which is not thought so good as placing it vertically or nearly so. But as these men have great experience in the process, we must hesitate before we blame a practice of which we do not immedi-

ately see the advantage. Those who steep the flax in the Lys itself, collect it in thick bundles nearly a foot in diameter, and somewhat longer than the flax, by laying several small bundles together, as described above. In these large bundles the root projects at each end, and the tops are inside. They are tied round very tight in two places, about six inches from each end. They are then packed upright and closely packed in a cage or frame, made of wood and laths, ten feet square and four deep; boards loaded with stones are placed over the top, so as to sink the whole a few inches below the water of the river. Thus the water runs over and under the frame, and is continually changed. The consequence of this is, that the flax becomes of a clear, white colour, without the usual bluish tint and is therefore more valuable. The time of steeping is somewhat longer than in stagnant water. It is pretended by those who do not adopt this method, that there is considerable loss in the weight of flax steeped in this way, which counterbalances the superior value. This is however not clearly proved, and the quantity of flax brought from a great distance to be thus steeped, is a presumptive proof that this method is, on the whole, the most profitable, and the best.

The flax is frequently examined when it is nearly steeped enough. If it be left a few hours too long in the water, the quality is injured; and if it be taken out too soon, the whole fibre will not be detached, but will break in the scutching. As soon as the fibres separate from the woody part, the whole length of the plant, it is immediately taken out of the water, the bundles are untied; and the flax is spread out to dry on a piece of short grass—the place having been previously well swept, that no earth or dirt may be on it. In rainy weather this process is deferred; as rain would now injure the flax materially. It remains on the grass ten or twelve days; and is frequently turned over during that time. It is then housed; and in the course of the winter it is scutched and heckled—operations, which, not necessarily connected with agriculture, need not be described here.

The capsules containing the linseed, which were separated from the stem before they were steeped, are spread on cloths in the sun to thoroughly dry them; after which they are stored in a dry granary until the seed be wanted for crushing or for sowing. The seed which is beaten out in winter is better than that which has been separated from the capsules at first, because it has had time to ripen, and to convert more of its mucilage into oil. The Flemish flax seed, when sown, produces more seed than that from Riga, but the flax is inferior. Hence fresh Riga seed is bought every second year. Next to Courtray, for the growth of good flax, are Roulers, Thielt and Ouchenarde; the Waes district comes next, with Termonde and Alost: that from the neighbourhood of Ghent is inferior.

An acre of good flax, near Courtnay is worth from £20 to £25, without reckoning the seed, which is worth £5 or £6 more. Merchants come out of France and Brabant to buy it, as it is pulled and tied in bundles. They have it steeped at their own expense by the regular steepers. In other districts the flax is of less value; in some not above half this sum. When it is considered that wages are not much more than half of what they are in England, it will be seen that the rent and profits of an acre of land fit for the growth of flax, must be considerable; but it must be observed that this golden crop only recurs every nine or ten years and the continual manuring of the land must in part be set off against this crop, which, some how or other, considerably reduces the fertility of the land.

Hemp is not cultivated so extensively as flax, but as it forms a principal produce in the Waes district, where there are some considerable rope and cable manufactories, and is cultivated with some care, it cannot be passed over. The best soil for this plant is a good deep loam, such as it is found in spots in the Waes district, and near Alost. The hemp raised on this soil is long and of a strong texture, and consequently well adapted for cables, cordage and strong canvas for sails. In lighter soils the hemp is sown thicker, and does not attain the same size or strength.

The soil on which hemp is intended to be sown is ploughed in autumn, and again in spring. In the middle of May it is manured with fifteen tons of good rotten dung, which is immediately ploughed in, unless the land had been manured in autumn, which is the better practice, as then the dung is already in a decomposed state at the spring ploughing. In some small farms the hemp-land is trenched and prepared with the spade, and it amply repays the additional expense. In either case the liquid manure is not omitted, especially if *vidanges* can be procured; five tubs of this last, each as much as a horse can draw on the land, are considered as good a dressing as fifteen hogsheads of the common tank liquor, which is chiefly cows' urine. This manure is allowed to sink into the soil for three or four days; the land is then harrowed, and about

half a bushel of hemp seed is sown per acre. The seed should be heavy, shining and dark-coloured, and of the preceeding crop ; in three or four days the plants make their appearance, and soon after this they are carefully weeded and thinned out by hand. In very good soils, and where strong hemp s required, the plants are left six inches from each other. The strongest plants are pulled up in preference, as the male plants, which produce no seed, appear first. The name of male and female, as applied to the plants of hemp by botanists, are usually inverted by the hemp growers. They call that which produces the seed the male plant, and that which is barren the female. These names were no doubt used before the sexual system was well understood ; but we shall call that the female which bears the seed. The male plants arrive first at maturity, at the time when the flower sheds the pollen which impregnates the female. They should then be gathered, as they would wither and become useless. if left till the seed was ripe on the female plants. This taking out the male plants does good to those which remain; and in order that this may be done without breaking the females, the seed should be sown in narrow beds with paths between them. From this circumstance arises a practice of sowing hemp in a border all round a garden or potato-ground, or in rows with potatoes between them.

When the female hemp is fit to be pulled, the plants are drawn out of the ground with the roots and laid in small bundles about six inches in diameter. These are placed against each other in a circle, the heads forming the apex of the cone. If the weather should be very rainy while they are in that state, the heads are sometimes protected from the rain by a covering of straw ; but this is not a common practice. If the weather is fine, the whole is sufficiently dry in a week or ten days; the seed is then taken off by means similar to those employed for flax, and the hemp is steeped.

The female hemp requires the least time for steeping; a week or ten days in the water is sufficient to make the fibres separate from the wood. If a much longer time is required, it is a proof that the hemp was either pulled too soon, or allowed to stand too long.

Rye or wheat is usually sown on the land which has borne a crop of hemp. Sometimes turnip-seed is sown amongst the hemp, when the male plants are pulled up; but this is scarcely worth while, and the return seldom repays the trouble. Before the whole crop is pulled, if that takes place in September or October, the rye or wheat is thrown amongst it ; the peeling of the stems covers this seed, and no other tillage is required. A slight application of the liquid manure soon makes the corn spring up; this saves ploughing and harrowing.

The produce of an acre of hemp in Flanders is about 350 lbs. of hemp, and from thirty to thirty-five bushels of seed, if the soil is good and well cultivated. It is not usual to sow hemp repeatedly in the same ground, as is done in many other countries, and also in parts of England, where a hemp land is a name given to some enclosure near the farm house, which from time immemorial is the only spot where hemp is ever sown.' The Flemish farmers have no hemp lands; and they seldom sow this crop again in the same spot in less than eight or ten years. Hemp requires so much care and manure, that it is not a favorite crop ; it clears the land from weeds, and is a good preparation for wheat; but flax is upon the whole more profitable, and therefore prefered.

When the hemp has been steeped and dried, the fibres are separated from the wood by hand, or by a mill which crushes the woody part. This mill consists of a stone of a conical shape, revolving on another circular stone laid horizontally, as in a cider mill; the wood is thus broken and afterwards easily separated from the fibre by beating and combing; but it is more commonly separated by hand; and the hemp thus treated is preferred. It is an easy employment for old people and children, by the winter's fire, or on a summer evening; but it is too tedious to answer on a large scale.

COL. MORRIS'S STOCK.

One of the advantages of a good agricultural paper is, the information it gives the farmer in regard to stock. If the reader of such a paper can find in its columns reliable accounts of the most carefully selected and best managed herds of cattle, &c., and the names and repute of those breeders who keep animals for sale, he may save himself much trouble, anxiety, and expense. In dealing with pretenders and sharpers, too many af whom are now "abroad," you can never be sure that you get what you have bargained for. Our advice is, to place more dependence upon the skill and character of the breeder than upon your eyes. These will often deceive you, especially in the matter of improved stock. It is better to be sure of the pedigree than to rely on a fine form.

As we have opportunity we shall extend our ac-

quaintance *personally* with breeders and their stock, in the United States, as well as Canada, and then we shall be able to speak with more confidence on this important subject.

We made some reference in our last number to the stock of Col. L. G. Morris, of Mount Fordham, N.Y.; and promised a further notice. We give below a portrait of his Devon Cow, "Birth-day." She took the first prize in her class at the New York State Fairs of 1853 and 1854. Mr. Morris has a splendid herd of Devons; and thinks them even more profitable on light soils than the Durhams:—

BIRTH-DAY,

(38 Davies' Herd Book), winner of 1st prize at Devon Agricultural Show at Exeter, England, 1848, and at Barnstaple as one of a dairy of cows; also, 1st prizes at New York State Fairs of 1853 and 1854.

We saw the Essex and Berkshire pigs in their "best estate," at Mount Fordham. Colonel M. takes great pains in breeding them; and in supplying orders always selects pairs from different families.

Below is a portrait of two of his finest Berkshires:

LADY BURKE AND SIR ROBERT,

Winners of the 1st prize in their classes at the New York State Fair, 1854.

THE MONTHS—MAY.

May is the very month of mirth!
And if there be a time on earth
When things below in part may vie
For beauty with the things on high,—
As some have thought earth's beauties given
For counterparts of those in heaven,—
'Tis in that balmy vernal time,
When Nature revels in her prime,
And all is fresh and fair and gay,
Resplendent with the smiles of May.

MANT'S MONTHS.

The month of May has always been a peculiar favourite with the poets and the lovers of nature, and high praises have been sung of its beauty and attractiveness. It should be remembered, however, that many of the most charming characteristics of this month have been drawn from more southern climates than that of this country or the British Isles; and the change of reckoning from the Old Style to the New, causing a difference of twelve days, will, in some degree, account for the discrepancy which too often appears between the weather and natural appearances of the beginning of the month as experienced by us, and the glowing descriptions frequently given by poetical writers. Notwithstanding the fickleness so common to the early part of the month, yet this is pre-eminently the season of hope and joyous excitement, and Nature is prodigal of her vernal gifts. She scatters flowers, and revels in dews; for, though we moderns may abandon the customs of our forefathers, and even deny to May those joyous attributes with which they delighted to invest her; though we complain of cold winds, and sometimes dull days, and frosty nights, cutting down flower and leaf, yet is May a gladsome month withal. The profusion of flowers, so delightful to both sight and smell; the leafing and blossoming of shrubs and trees; cool and refreshing showers, often in connection with warm sunshine and an atmosphere most delicious and invigorating to inhale;—each and all combine to foster feelings and sentiments of the highest rational enjoyment. It is the season of rural labour and activity, and equally that of rural gratification and expectancy.

The modern name of this month is derived from the goddess *Maia*, a divinity who was worshipped under many names by the Romans, but whose chief title was *Bona Dea*, or the "Good Goddess," as representing the earth. By our Saxon ancestors May was called *Tri-milki*, "because (as an old writer observes) in that month they began to milke their kine three times in the day."

The first of May, or, as it is commonly called, *May-day*, was in the olden times a day of universal relaxation and social enjoyment. The origin of several of the May games and pastimes of our ancestors must, no doubt, be looked for in still remoter ages, and in an Eastern direction. The following extract from Stow will give the reader some idea of the habits of the English two or three centuries ago:—"In the month of May, namely, on May-day in the morning, every man, except impediment, would walk into the sweete meadows and green woods, there to rejoice their spirites with the beauty and savour of sweete flowers, and with the harmony of birds prayeing God in their kind; and for example hereof, Edward Hall hath noted that K. Henry the Eight, as in the 3 of his reigne, and divers other years, so namely on the seventh of his reigne, on May-day in the morning, with Queene Katheren his wife, accompanied with many lords and ladies, rode a Maying from Greenwich to the high ground of Shooter's Hill, where, as they passed by the way, they espied a companie of tall yeomen clothed all in greene, with greene whoodes, and with bowes and arrowes, to the number of 100. One being their chieftaine, was called Robin Hoode, who required the king and his companie to stay and see his men shoote, whereunto the king granting, Robin Hoode whistled, and all the 200 archers shot off. losing all at once; and when he whistled againe, they likewise shot againe; their arrowes whistled by craft of the head, so that the noyse was strange and loude, which greatly delighted the king, queene, and their companie."

The *Morris-dance* is a May-day festival still retained in some parts of the North of England. A rush-cart, drawn by horses, precedes the procession of the dancers, who are attired in comic and holiday costume, Robin Hood and his companions being frequently the principal characters. This custom is thought to be of Moorish origin, and to be derived from Spain.

Dancing round the May-pole, on May-day, is a practice that still partially survives in England; and seems peculiarly appropriate to this vernal season. The late learned Dr. Parr evinced great interest in perpetuating this ancient custom, and erected a May-pole on his parsonage grounds, around which the young men and maidens of his parish were wont to dance, accompanied by the good doctor himself. Aubrey informs us that at Oxford, "the boys doe blow cowshorns and hollow canes all night; and on May-day the young maids of every parish carry about their parish garlands of flowers, which afterwards they hang up in their churches."

The rural gaities and festivities of this enchanting season formerly observed in "merrie England," have of late years almost become obsolete. Still nature continues the same,—always beautiful, inspiring, and instructive. She still scatters her lovely flowers over verdant fields and woods; the wild songsters of the grove continue to charm us with their sweet music, and the whole face of creation wears an aspect of

beauty, tenderness and love. The May festival has come down to us from a very remote antiquity, and its origin is probably owing to some of the earlier nations of the east.

Some classes, such as the milkmaids and the chimney-sweepers, have in particular assumed this day for a distinctive festival; or, what is more likely, they continued to celebrate it long after it fell into disuse with their neighbours. The first of these have in most parts continued their Mayings, though Strutt, who wrote little more than seventy years ago, says, "the Mayings are in some sorte yet kept up by the milkmaids of London, who go about the streets with their garlands and music, dancing." Misson, too, but he is of yet earlier date, has described the same thing, and more minutely:—"On the first of May," he observes, "and the five and six days following, all the pretty young country girls that serve the town with milk, dress themselves up very neatly and borrow abundance of silver plate, whereof they make a pyramid, which they adorn with ribbands and flowers, and carry upon their heads instead of common milk pails. In this equipage, accompanied by some of their fellow milk-maids and a bagpipe, or fiddle, they go from door to door, dancing before the houses of their customers, in the midst of boys and girls, that follow them in troops, and everybody gives them something."

Whit Sunday, or *Pentecost*, which occurs this year on the 27th of this month, is an Ecclesiastical festival, set apart at a very early period in commemoration of the miraculous out-pouring of the Holy Spirit on the Apostles. The appellation of Whit-Sunday is generally allowed to be only a slight abbreviation of *White*-Sunday, from the early and eastern practice of candidates for baptism being clothed in white.

This day is also the anniversary of St. Augustine, who was deputed by St. Gregory to be the converter and apostle of the English. He succeeded in impressing the truth of the Christian religion on Ethelbert, king of Kent, and many of his subjects, and became the first Archbishop of Canterbury. After many years of persevering labor this venerable man died on the 26th May, about A.D. 610, and was afterwards canonized.

In many parts of England Whitsun-week is observed more or less as a holiday, particularly in the manufacturing districts. Tens of thousands of children in Manchester and other large towns, belonging to Sunday and other schools, are taken by railways and boats long distances into the country, for rural recreation. It has long been a practice for the young folks to appear in new attire at this festival; all are animated by expectancy and enjoyment, and the attractive beauties of spring help not a little the general effect.

We are among those who have the belief that whatever tends to refine and enlarge the range of human sympathies, and to promote the unsophisticated enjoyments of childhood, must be in accordance with the beneficent will of Providence, and should be warmly cherished. In the present material and utilitarian age there is danger lest some of the purest well springs of human happiness be permitted to dry up in the breathless race for wealth and worldly distinction. Of all dupes of society, however, the cultivators of the earth are the most inexcusable, if they neglect the moral teachings of their innocent and time-honored pursuit; in the daily following of which they not only witness the heart-striking proof of creation, wisdom, and goodness, but they are the actual instruments employed by the Divine Architect for the accomplishment of his benevolent purposes in the wonderful economy of nature, for the benefit and enjoyment of both the rational and irrational parts of his creation.

May is a busy month to the farmer, and as the present season is late, the larger portion of the most important operations of spring have yet to be performed. All kinds of grain should be sown as soon as the soil and atmospheric conditions are suitable. The early sowing of trees, carrots, parsnips, &c., for cattle food, is of much consequence, and the land should receive the best cultivation that circumstances will allow. Ground intended for turnips, mangel wurzel, potatoes, &c., ought now to be thoroughly prepared and manured, if not done before. The success of root crops depends far more on the cultivation and attention they receive than is generally imagined. It is not uncommon to hear men complain of the want of success in those matters, attributing their failure to some peculiarity of the season, when, in fact, it is simply due to their own want of skill and attention. There can be no doubt that root crops pay; but their culture must be thorough, in accordance with the most approved modern practices, and in a country like ours, it is generally inexpedient to have large breadths under such crops.

Bees still require attention, and in suitable situations will repay for all that is bestowed on them. In ordinary seasons, they seldom cast their swarms in this country before next month. Tusser in his *May's Husbandry*, says—

> "Take heed to thy bees that are ready to swarm,
> The loss thereof now is a crown's worth of harm;
> Let skilful be ready, and diligence seen,
> Lest being too careless, thou losest thy been."

There is an old proverb, as ancient as the days of Tusser, which says, in alluding to bees—

> "A swarm of bees in May
> Is worth a load of hay;
> A swarm of bees in June,
> Is worth a silver spoon;
> A swarm of bees in July
> Is not worth a fly."

We cannot more appropriately conclude our monthly paper, than with the following lines from Bishop Heber :—

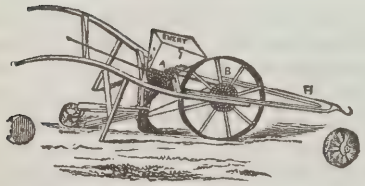
"Queen of fresh flowers,
Whom vernal stars obey,
Bring thy warm showers—
Bring thy genial ray.
In nature's greenest livery drest,
Descend on earth's expectant breast,
To earth and heaven a welcome guest,
Thou merry month of May !

"Mark ! how we meet thee
At dawn of dewy day !
Hark ! how we greet thee
With our roundelay !
While all the goodly things that be
In earth, and air, and ample sea,
Are waking up to welcome thee,
Thou merry month of May !

"Flocks on the mountains,
And birds upon their spray,
Tree, turf, and fountains
All hold holiday ;
And love, the life of living things,
Love waves his torch, and claps his wings,
And loud and long thy praises sings,
Thou merry month of May !"

B.

SEED SOWERS.



Seed Sowers have become very numerous; and it is difficult to decide between them as to merit Messrs. McIntosh & Walton, of this city, (to whose establishment we can with confidence recommend our readers,) have several kinds for sale. We are putting to the test one of their small hand sowers, mounted on two wheels. It is said to answer for most garden seeds, and for turnips, carrots &c., in the field.

The cut at the head of this article represents a kind much used in the States. We are not aware whether they have yet been patronized to any extent in Canada.

The Seed Sower, of which we gave a cut, in a late number, and which consists of a long, narrow box carried before the man, and suspended from the neck, is highly spoken of by those who have used them. They are also sold by Messrs. McIntosh & Walton.

SHEEP HUSBANDRY.

NO. 2.

NEW LEICESTER.

We present in this number a brief history of the New Leicester, or Bakewell sheep. This breed has been extensively introduced into Upper Canada, and is more esteemed than any other.

Some writers have contended that the valuable family of long-woolled sheep, now so extensively spread over Great Britain, was of foreign origin; but thorough investigation proves their assertions groundless.

With the short-woolled variety, from time immemorial, each was assigned a locality admirably adapted, from soil, herbage, and climate, to itself; and thus their respective peculiarities both of form and fleece, through many centuries, remained distinct. Both varieties have been essentially improved by the art of man, as has already been shown in reference to the South Down; and, if possible, a still greater improvement has been affected of the long-woolled breeds, especially as to profitableness of carcase, through the indefatigable efforts of Mr. Bakewell, of Dishby, Leicestershire, and Mr. Cully, his able coadjutor.

We offer no apology for introducing to the reader nearly the whole of Mr. Youatt's faithful and interesting history of this renowned breed, valuable to all as showing the means adopted by Mr. Bakewell by which the New Leicester was brought to its present perfection of carcase, and extraordinary early maturity.

THE OLD LEICESTER SHEEP.

"This was a large, heavy, coarse-woolled breed, common to most of the midland counties, and reaching from the south of Yorkshire, and as far as Oxfordshire and Gloucestershire. It had a white face, no horns—it was long and thin in the carcase, flat-sided with large bones—thick, rough, and white legs—and weighing, the ewe, from 15 to 20 lbs., and the wether from 20 to 30 lbs. the quarter. It was covered with wool from 10 to 14 inches in length, coarse in quality, and weighing from 8 to 13 lbs. The pelt and offal were thick and coarse; the animal was a slow feeder, and the flesh was coarse-grained, and with little flavor."

NEW LEICESTER SHEEP.

The following description of the New Leicester will show the reader in what respects Mr. Bakewell effected his improvement over the old breed.

"The head should be hornless, long, small, tapering towards the muzzle, and projecting horizontally forwards. The eyes prominent, but with a quiet expression. The ears thin, rather long and directed backwards. The neck full and broad at its base, where it proceeds from the chest, but gradually tapering towards the head, and being particularly fine at the junction of the head and neck; the neck seeming to project straight from the chest, so that there is, with the slightest possible deviation, one continued horizontal line from the rump to the poll. The breast broad and full; the shoulders also broad

and round, and no uneven or angular formation where the shoulders join either the neck or the back, particularly no rising of the withers, or hollow behind the situation of these bones. The arm fleshy through its whole extent, and even down to the knee. The bones of the leg small, standing wide apart, no looseness of skin about them, and comparatively bare of wool. The chest and barrel at once deep and round; the ribs forming a considerable arch from the spine, so as in some cases, and especially when the animal is in good condition, to make the apparent width of the chest even greater than the depth. The barrel ribbed well home, no irregularity of line on the back or the belly, but, on the sides, the carcase very gradually diminishing in width towards the rump. The quarters long and full, and, as with the fore legs, the muscles extending down to the hock; the thighs also wide and full. The legs of moderate length, the pelt also moderately full, but soft and elastic, and covered with a good quantity of white wool, not so long as in some breeds but considerably finer.

"It was about the middle of the last century that Mr. Bakewell first applied himself to the endeavour to improve the then existing breed in Leicestershire. Up to this period very little care had been bestowed upon the breeding of sheep.

"Two objects alone appear to have engrossed the attention of the breeders: first, to breed animals of the largest possible size; and, secondly, such as should produce the heaviest fleeces. Aptitude to fatten, and symmetry of shape, that is, such shape as should increase as much as possible the most valuable parts of the animal, and diminish in the same proportion the offal, were entirely disregarded.

"Mr. Bakewell perceived that smaller animals increased in weight more rapidly than very large ones; and that they consumed so much less food, that the same quantity of herbage applied to feeding a larger number of small sheep would produce more meat than when applied to feeding the smaller number of large sheep which alone it would support. He also perceived that sheep carrying a heavy fleece of wool possessed less propensity to fatten than those which carried one of a more moderate weight.

"Acting upon these observations, he selected from the different flocks in his neighbourhood, without regard to size, the sheep which appeared to him to have the greatest propensity to fatten, and whose shape possessed the peculiarities which he considered would produce the largest proportion of valuable meat, and the smallest quantity of bone and offal.

"In doing this, it is probable that he was led to prefer the smaller sheep, still more than he had been by the consideration above stated, because it is found that perfection of shape more frequently accompanies a moderate-sized animal than a very large one.

"He was also of the opinion that the first object to be attended to in breeding sheep was the value of the carcase, and that the fleece ought always to be a secondary consideration. The reason of this is obvious: the addition of two or three pounds of wool to the weight of a sheep's fleece is a difference of great amount; but if, to procure this increase, a sacrifice is made of the propensity to fatten, the farmer may loose by it ten or twelve pounds of mutton.

"The sort of sheep, therefore, which Mr. Bakewell selected were those possessed of the most perfect symmetry, with the greatest aptitude to fatten, and rather smaller in size than the sheep then generally bred. Having formed his stock from sheep so selected, he carefully attended to the peculiarities of the individuals from which he bred, and, it appears, did not object to breeding from near relations, when by so doing he put together animals likely to produce a progeny possessing the characteristics that he wished to obtain.

"Mr. Bakewell has been supposed by some persons to have formed the New Leicester variety by crossing different sorts of sheep; but there does not appear to be any reason for believing this; and the circumstances of their varying in their appearance and qualities so much as they do from the other varieties of the long-woolled sheep, can by no means be considered as proving that such was the system which he adopted. Every one who has attended to the breeding of domestic animals must have experienced that, *by careful selection of those from which he breeds, and with a clear and defined conception of the object he intends to affect, he may procure a progeny in which that object will be accomplished.*

* * * * *

"Such is the origin of the New Leicester breed of sheep, which have, within little more than half a century, spread themselves from their native county over every part of the United Kingdom, and are now exported to the continents of Europe and America. Such, indeed, have proved to be their merits, that at the present day there are very few flocks of long-wooled sheep existing in England, Scotland, or Ireland, which are not in some degree descended from the flock of Mr. Bakewell. A pure Lincoln or Teeswater flock is very rarely to be found; and although some flocks of the pure Cotswold breed remain, in the greater number of instances it is probable that they have been crossed with the New Leicester.

"No other sort of sheep possesses so great a propensity to fatten—no other sort is fit for the butcher at so early an age—and although they are not calculated for the poorest soils, where the herbage is so scanty that the sheep must walk over a great deal of ground for the purpose of procuring its food, no other sort of sheep, in soils of a moderate or superior quality, is so profitable to the breeder.

"They vary much in size, weighing at a year and a half old, with ordinary keep, from 24 to 36 lbs. per quarter. In this respect, therefore, they are inferior to the Lincoln, the Cotswold, and the Teeswater sheep. By crossing them with either of these breeds, the size of the sheep may be considerably increased; and it is said that this may be done without diminishing perceptibly either their inclination to become fat, or the early maturity for which they have always been remarkable.

"The kind of meat which they yield is of a peculiar character. When the sheep are not over fattened, it is tender and juicy, but, in the opinion of many persons, somewhat insipid.

* * * * *

"The Leicester sheep were never favorites with the butcher, because they had little loose inside fat. It ought, nevertheless, to have been recollected that the smallness of the head, and the thinness of the pelt would in some measure counterbalance the loss of tallow; and that the diminution of offal is advantageous to the grazier, for it shows a disposition to form fat outwardly, and is uniformly accompanied by a tendency to quickness of improvement.

"The New Leicesters, however, are not without their faults. They are not, even at the present day, so prolific as most other breeds. This was too much overlooked in the time of Bakewell and his immediate followers. Their object was to produce a lamb that could be forced on so as to be ready, at the earliest possible period, for the purposes of breeding or of slaughter, and therefore the production of twins was not only unsought after, but was regarded as an evil.

* * * * *

"It was likewise, and not without reason, objected to them that their lambs were tender and weakly, and unable to bear the occasional inclemency of the weather at the lambing season. This also was a necessary consequence of that delicacy of form, and delicacy of constitution too, which were so sedulously cultivated in the Leicester sheep.

"The last objection to the New Leicester sheep was the neglect and deficiency of the fleece. There is little cause, however, for complaint at the present period. The wool has considerably increased in length, and has increased both in fineness and strength of fibre; it averages from 6 to 7 lbs. the fleece, and the fibre varies from 5 to more than 12 inches in length. It is mostly used in the manufacture of serges and carpets.

"The principal value of this breed consists in the improvement which it has affected in almost every variety of sheep that it has crossed; but it has met with, especially in Wales, a powerful antagonist in Costwold."

The introduction of additional evidence showing the necessity of providing luxuriant pasturage for the Leicester breed, will be proper.

"I occupied a farm," says a Lammermine shepherd, "that had been rented by our family for nearly half a century. On entering it, the Cheviot stock was the object of our choice, and so long as we continued in possession of this breed, everything proceeded with considerable success; but the New Leicesters came into fashion, and we, influenced by the general mania, cleared our farm of the Cheviots and procured the favorite stock. Our coarse bean pastures, however, were unequal to the task of supporting such heavy-bodied sheep; and they gradually dwindled away into less and less bulk; each generation was inferior to the preceding one; and, when the spring was severe, seldom more than two thirds of the lambs could survive the ravages of the storm."

Sir John Sinclair has also recorded his opinion on this point. "The Leicester breed is perhaps the best ever reared for a rich arable district; but the least tincture of this blood is destructive of the mountain sheep, as it makes them incapable of withstanding the least scarcity of food."

MALFORMATION OF THE TURNIP.

The following facts were communicated to a recent meeting of the *Chemico Agricultural Society of Ulster*, and published in its Journal of Transactions, for a copy of which we are indebted to the kindness of some unknown friend. We remember nearly two years since some similar turnips grown by the Hon. Adam Ferguson, of Woodhill, Upper Canada, the seed of which had been imported direct from a most respectable house in Scotland. There can be little doubt that peculiar atmospheric conditions, as well as the soil, have an influence on the result.—Editor.

"Specimens of turnips, exhibiting in a most remarkable manner the curious splitting up of the bulb into numerous roots and the production of several stems, so as totally to alter and destroy the character and value of the crop, were placed on the table, and excited much interest. The specimens, Dr. Hodges stated, had been forwarded by Messrs. Drummond, the eminent seed merchants in Dublin, and had been taken from a field on which the crop was of excellent quality, except in a patch of ground in the corner of a field, where the plants, like the specimens, had "sported" so much from the normal form that they presented the appearance of rape. The soil from the plot on which the malformed roots were growing had been forwarded by Mr. Drummond for chemical examination; and Dr. Hodges reported that he was also engaged with the investigation of soils from the Albert Model Farm, near Dublin, on which the turnips had also become malformed, and, in many cases, diseased. The subject was of serious importance to the public, and he would direct the attention of the society to the aid which the members might afford to the investigation of the disease—if it might be so termed—which interfered so much with the project of the farmer. He also described the extent to which mildew had appeared this year on the turnip leaf.

Grass Seed for an Acre.—An English farmer recommends the following mixture for an acre—8 lbs red clover, 2 lbs. white do., 2 lbs. yellow do., with one bushel of rye grass. This, by his computation, affords 100 seeds rye grass, 50 red clover, 32 white, and 12 yellow clover, per superficial foot. In this country a good substitute for the rye grass would be the same quantity of red-top per acre.

Plaster operates beneficially on light, dry and sandy or open soils, as they soonest admit the rain water which dissolves and conveys it to the roots of the plants. Plaster may be applied to pasture or mowing lands in March or early in April, often with fine effect.

MILLET AND ITS CULTURE.

Mr. Editor,—Of the millet there are three distinct genera: the *Polish* millet, the *Indian* millet, and the *Common* millet.

Of the *Common* millet there are three species: the *German*, the *common* or *cultivated*, and the *Italian*.

The *German* millet grows with a reed-like stalk, from two-and-a-half to three feet high, with a leaf at each joint about one-and-a-half feet long, and about one inch broad at the base, ending in a sharp point, rough to the touch, surrounding the stalk at the base, and turning down about half the length. The stalks terminate by compact spikes about three-fourths of an inch in diameter at the bottom, tapering to the top, six or eight inches long, and closely set with small roundish grain It is an annual, and soon perishes after it has ripened its seeds. Of this kind of millet there are three varieties, the *white, yellow, and purple* grained.

The *Italian* millet rises also with a reed-like stalk, four feet high; the stalk is thicker, and the leaf broader than the preceding; the spikes are from eight to twelve inches in length; they are not compact but are composed of several roundish clustered spikes. There are also two or three varieties of this, distinguished only by the colour of the seeds.

The above described species of the common millet being the only kinds cultivated in this section, I shall omit giving a description of the other kinds; and proceed at once to give my readers the benefit of my practical knowledge in reference to its culture.

In consequence of my meadows being destroyed by the severity of the winter of 1854, I was of necessity compelled to substitute something for the hay crop, and finally decided upon millet. I found it very difficult to procure seed, but much more difficult to procure reliable information with regard to its culture; consequently, my first year's experience was in reality a year of experiment.

The field upon which I sowed my millet was a wheat stubble. The soil sandy loam, the higher portions of the field being quite sandy, and in a medium state of cultivation: the surface undulating. During the latter part of May it was ploughed ten inches deep, with a Polly plough, No 2, which is one of the best stubble ploughs in use. The first week in June the ground was harrowed twice, lengthwise of the furrow, with a heavy double scratch harrow. The millet seed was sown immediately, at the rate of 12 quarts per acre, and followed with a light seed harrow and roller. I commenced cutting my millet in the middle of August, with a common grain cradle: let it lie in the swath one to two days, according to the temperature of the weather: bound in sheaves and shocked up the same as wheat. Judging from the number and size of the loads, the yield was two tons per acre. Had the season been favourable the produce would have been one-third more.

From my limited experience I have come to the conclusion that millet is peculiarly adapted to light, warm soils, but will grow on almost any soil which is not too wet; that the soil should be ploughed deep and well pulverized; that the time to sow the seed, if intended for hay, is any time during the month of June—if intended to ripen, the last week in May; that the quantity of seed if intended for hay should vary from 16 to 20 quarts—very rich soils requiring most seed to prevent the stalks from growing too rank—but, if intended to ripen, 8 to 10 quarts per acre will be quite sufficient; that the proper time to harvest if for hay, is when the grain is just filled and the top of the head or spike is beginning to turn yellow, but if intended for seed it should fully ripen; that the best mode of harvesting is to cut with the cradle or reaper and bind into sheaves when sufficiently dry; and that the yeild per acre on good soils well cultivated, will be from 3 to 4 tons of hay or 30 to 40 bushels of seed. It leaves the soil in a loose, friable state, consequently grass and clover seeds do well when sown with it.

As to nutritous qualities, it is a regular panacea for the craving of all hungry stomachs, whether of biped or quadruped. Horses will work hard and keep in fine condition by being fed on green millet, finely cut with a straw-cutter and mixed with four quarts of ground millet seed per day, to each horse. Feed in the same way to milch cows, it will keep them fat and sleek, and cause an unusual flow of good rich milk. Colts, calves. and sheep fairly luxuriate in the green fodder. The seed fed to hens will make everlasting layers of them, whether Dorkings, Shanghæs, Poland, Spanish, or native, other necessaries being provided.

D. W. Freeman.

Windham, C. W.—*Genesee Farmer.*

SOWING CLOVER SEED.

Clover takes a place so important in the system of rotation by which the fertility of our wheat farms is kept up, that we may be excused for recalling some hints heretofore given upon the subject. The season for deciding and acting in the matter is here, and remarks upon quality and quantity, manner and management, will neither be mis-timed or uninteresting.

It is only about eighty-five years since Clover—and with it Gypsum or plaster of Paris—was first introduced into this country from Germany. These together had worked wonders in Flemish and English agriculture, and have now come to be pretty well known and appreciated in our own. Clover is grown very extensively for hay and pasture and for plowing under as a green manure, wherever the wheat crop is the staple product. Several varieties, known as the large, small, and medium kinds, are cultivated, but in this section the latter prevails most extensively, and is generally preferred, as making better hay, and being equally valuable as a fertilizer As to the quality of the seed, great care should be taken that it be pure, for some of the worst pests of the farm have been more widely disseminated by being sown with clover seed brought from a distance.

The true economy as to quantity of seed, is to *sow liberally*, for by *saving* five dollars here, a loss of twenty dollars is often sustained in hay and pasturage. One-third of a bushel is the least amount, even when mixed with other grass seeds, which

should be sown on an acre. The difference between half and full seeding is very great—as indeed it must be when one covers the earth with a thick growth of grass, while the other does it very imperfectly. Some experiments made to test the matter show more than double the product for several years from the field fully seeded, over that where only the usual quantity had been sown.

Spring is undoubtedly the best time for seeding wheat fields to clover, and is that generally employed. Many fields are already sown, though the backward spring has doubtless delayed others. The use of a light harrow after sowing is the best security for the vegetation of the seed and the permanence of the young plants, and will not injure the wheat in the least, but is generally thought very beneficial to that crop. The growth of clover is increased, and its "catching" in a measure ensured, by a top-dressing of from one to three bushels of plaster per acre in May. No one who has observed the essential difference in plastered and unplastered clover will neglect its application.

Clover takes less from the soil and more from the atmosphere, in proportion to the feeding and manuring value of its product than most other plants. This is one source of its value—its numerous roots, long stalks, and abundant leaves, supplying much vegetable matter to the soil. A luxuriant growth of clover is an excellent preparation for any and every crop. The soil is loosened and deepened by its far-spreading roots, which bring to their support and to the surface the valuable salts in the subsoil not usually pressed into service. This, too, is the reason why clover so delights in a deep, fresh, soil, and why after subsoil plowing such abundant crops are sure to follow.—*R. N. Yorker.*

Horticulture.

THE GARDEN.

We gave a few directions in our April number for early garden operations. Though some of these may be repeated, we think we cannot do better than publish entire the "Hints" of Mr. Fleming, as given in his catalogue. They are adapted to the soil and climate of this part of Canada, and as Mr. Fleming ranks a A No. 1, as a gardener and seedsman, we publish his directions with much confidence.

We take this occasion to remark that Mr. Fleming may be relied upon as a man of skill and integrity. He keeps a large assortment of seeds, roots, flowers, &c., and persons at a distance may depend upon having their orders correctly filled. :—

Brief Hints on Sowing and Raising Culinary Vegetables.

BY JAMES FLEMING.

In selecting seeds, the first thing to be attended to is to chose the best to be had, and, if possible, obtain them from a responsible seedsman. Never buy those which are "cheap" because they cost less for they will prove the "dearest" in the end.

Most kinds of Seeds grow more freely if soaked in soft water from 12 to 48 hours before sowing. Seeds of a hard nature, such as blood-beet, wurzel, nasturtium, &c., often fail from want of attention to this circumstance. Indian Corn, Peas, and numerous others, soaked four hours in a tepid solution of chloride of lime and water, mixed in the proportion of one-fourth of an ounce of the lime to a gallon of water, and then sown in the ordinary way, have been known to throw out germs in twenty-four hours.

The seeds of common garden cress, immersed in oxygenated muriatic acid, will germinate in six hours whereas, when immersed in water alone, they will not show signs of vegetation in less than thirty hours.

Rolling the ground, after sowing, is very beneficial and will assist in making the seeds vegetate more freely. Where a roller is not at hand, it may be done with the back of a spade.

Kidney, or *French Beans,* may be planted any time in May, in drills two inches deep, the beans two inches from each other ; the drills about 18 inches apart. If a regular succession is required, sow a few every few weeks, from the 1st of May to the 1st of July.

Broad, or *Windsor Beans,* do not succeed well in this climate, the summer heat coming on them before they are podded, which causes the blossoms to drop off. The best soil to grow them in is a rich, stiff clay, and on a northern border, shaded from the mid-day sun. Sow in drills two feet apart, the drills two inches deep, and the seeds three inches apart.

Blood Beet, Long and Turnip, may be sown in a good, rich, deep soil, about the first week in May. Draw drills about a foot apart and one inch deep ; sow moderately thick; when the plants are up strong thin them out the distance of six inches from each other in the rows.

Brocoli and *Cauliflower* require a deep rich soil of a clayey nature, and highly manured. To produce early Cauliflower, or Brocoli, the seed ought to be sown in a hot-bed, early in March. When the plants are quite strong and hardy they may be planted out in the garden, about the middle of May. Plant in rows, two feet square. The kinds that will do well in this climate are the Early London and French Cauliflower, Purple Cape, and Walcheren Brocoli.

Cabbage, both early and late, may be sown any time in May. The best situation for raising the

plants is a rich, damp piece of ground, partially shaded. Seed sown in a situation of this kind is not so subject to be destroyed by the black flea. When the plants are strong they may be planted in rows, and managed the same as directed for Cauliflower. The best kinds for summer use are the Early York, Battersea, and Vannack; for winter use the Drumhead, Large Bergen, and Flat Dutch.

Cucumbers may be sown in the open ground any time in May. They require a good, rich soil. Sow in hills, four feet apart, leaving only three plants on each hill. The cucumber and melon vines are liable to be attacked by a yellow fly or bug. Soot, charcoal dust, or soap-suds, applied to the plants, will assist in keeping them off.

Musk and Water Melons may also be sown at the same time, taking care to sow the different kinds a good distance apart from each other, as they are apt to mix. Plant in hills, six feet square, leaving only three plants on each hill. When the plants have grown about six inches, stop or pinch out the top of the leading shoots; which will make the plants throw out lateral shoots, on which you may expect to have fruit.

Carrots.—The most suitable ground for growing carrots is a deep, rich soil, that has been well manured the previous year. Sow any time in May, in drills one foot apart, and one inch deep. When the Carrots are up, thin them out, four inches apart; and keep the ground free from weeds. The kinds that are generally sown in gardens are the Early Horn, Long Orange, and Red Surrey; for field culture the White Belgian and Altringham. The produce of one acre of field Carrots, when properly cultivated, may be rated at from 500 to 800 bushels In cultivating them on the field system, the drills ought to be two feet apart, and the Carrots thinned out, at least, twelve inches asunder.

Celery.—This vegetable is much esteemed as a salad. It requires considerable attention to grow it to perfection. To have early Celery the seed requires to be sown in a hotbed, in the month of March; for winter Celery, the seed may be sown in a hotbed, in the month of March; for winter Celery, the seed may be sown in the open ground, any time before the middle of May. Sow on a small bed of fine, rich earth—beat the bed down with the back of the spade—sift a little fine earth over the seed—shade the bed with a mat or board until the plants begin to appear. Celery plants ought to be picked out into a nursery-bed as soon as they are two or three inches high. Cut their roots and tops a little, before planting; water them well, and shade them from the sun until they begin to grow. Let them remain in the nursery-bed about one month, after which they will be fit to transplant into the trenches. The best sort of soil to grow Celery in is a deep, rich loam, and in an open part of the garden. Mark out the trenches a foot wide, and three feet between each trench. Dig the trenches one foot deep, laying the earth equally on each side. Put three or four inches deep of well rotted manure into the bottom of each trench; put a little of the surface soil over the manure; dig it well up, incorporating the soil well with the manure; dress the plants by cutting off the long leaves and the ends of the roots. Plant in single rows, along the centre of each trench, allowing six inches between each plant. Water them well, and shade them from the sun until the plants begin to grow. In earthing up Celery great care should be taken not to cover the heart of the plant

Lettuce is easily raised from seed which may be sown from the 1st of April to the end of June. If good headed Lettuce is wanted, the plants should be transplanted out on a rich piece of ground, in drills 12 inches apart and six inches in the drill. The Malta, Green Coss, and Victoria Cabbage are the most suitable kinds to sow, as they head without tying up.

Onions.—The yellow and large red are the best for a general crop. The ground for Onions should be well prepared, by digging in plenty of well-rotted manure. The seed may be sown from the middle of April to the middle of May. Sow in drills, one inch deep and 12 inches apart. When the young Onions are up, thin them out to the distance of three inches apart.

Parsnips require a deep rich soil. Sow in drills, one inch deep, and the drills 15 inches apart. Cultivate the same as directed for Carrots.

Radishes should not be sown in the open air sooner than the middle of May. They require a deep, sandy soil, that has been well cultivated and manured the previous year.

Rhubarb is a perennial plant, and may be raised from seed. Sow about the middle of May. When the plants are one year old, they should be transplanted into a very deep, rich soil, in rows three feet apart. The foot stalks of the leaves should not be cut until the plants are two years old.

Salsify is an excellent vegetable. The roots, when properly cooked, resemble oysters in flavor. The seed may be sown from the 1st of April to the

middle of May. They require the same kind of soil and cultivation as directed for Carrots.

Spinach is an useful vegetable, and very hardy. Seed sown in the month of September will stand over the winter, and come in for early greens in the spring. For summer use, seed of round Spinach may be sown from May to July. It requires a rich soil. Sow in drills, one foot apart.

Tomatoes are much cultivated for their fruit. To have them early, the seed should be sown in a hot-bed, early in March. When the plants are a good size, and Spring frosts are over, plant them out in the garden; let the plants be four feet apart. Plant on a south border near a fence, and they will produce abundance of fruit.

Turnips—One of the best sort for garden is the Early White Stone, which may be sown from the middle of May to the end of August. Sow in drills fifteen inches apart, and thin out the plants to eight inches assunder. Field Turnips, such as Swedish, Aberdeen Yellow, &c., may be sown in drills, two feet apart, about the middle of May. White Globe, and Flat Norfolk, will do to sow about the middle of July. Turnips are very apt to be eaten by the black flea. A good remedy is to steep the seed one night in train oil. This will greatly promote germination, and the growth of the young plants.

THE STRAWBERRY.

This delicious and healthy fruit is found in a wild state so plentifully, and of such good quality in many parts of Canada, that we do not wonder at the neglect with which the large and improved varieties are so generally treated. But in many Townships it must be cultivated in the garden, or a supply can not be depended on.

In the neighbourhood of New York and other large cities, strawberry culture has become an extensive and profitable business. Indeed, they are transported by rail many hundred miles to all the large cities. While on a visit to New York last summer, we had strawberries at dinner every day, that were grown in Virginia. They are brought to market in small baskets holding little more than a pint. These are all carefully preserved by the dealers, and returned for another supply of fruit. Why are our Canadian markets so poorly supplied with this delicious fruit?

To aid those who may wish to plant a few beds we copy the following directions from the best and most recent work on the subject. Mr. Saxton, N. Y., has sent us a neat little work, entitled "A complete Manual for the cultivation of the strawberry with a description of the best varieties, &c.," by R. G. Pardee. There is also an appendix, containing the observations of some of the most successful cultivators in the United States. We give in this number the directions for spring treatment. Summer treatment, such as mulching, watering, &c., will be given in the June number:—

SITUATION.

A warm, exposed, and yet rather moist location is the best for a strawberry plantation.

If very early fruit be an object, select a side-hill gently sloping towards the south, with a liberal admixture of small stones or coarse gravel in the soil. This should then be protected on the north, west, and east by a high closed board fence, or a live hedge; we have seen an artificial hedge of withered evergreen boughs that answered an excellent purpose, and enabled the owner to realize fifty cents a quart for the crop, when otherwise he could not have so much anticipated the usual season, and would have been compelled to take twelve-and-a-half cents for the same quantity.

If late fruit be desired, then select a piece of land facing the north, and exposed. Low land is usually preferable to high, hilly land for the strawberry, yet it can easily be raised on both; a little knowledge of its character will enable us to remedy the defects of the high ground. If the situation is near a spring of water, where it can be irrigated, and is also susceptible of drainage, it is very desirable.

Though they will sometimes succeed when partially shaded with trees or shrubbery, yet they are best flavoured in an open garden, with no shade but their leaves. Alpines, and some other kinds, planted in the northern shade of a fence or dwelling, will commence later and continue longer in their bearing season.

SELECTION OF SOIL.

New land, recently disrobed of its forests, if of a deep gravelly loam, we think is the best adapted to the strawberry, and next a sandy loam; but almost any soil, even the heaviest clay, can be prepared by a liberal admixture of sand or gravel, so as to produce the finest fruit.

As has been intimated, a low moist soil as can be procured, consistently with depth and thorough drainage, is best adapted to the strawberry; and yet elevated knolls, and even sand-hills, with the precautions above named, have often succeeded well.

Wet, spongy lands, except with a porous subsoil susceptible of drainage, and high, barren hills, with a thin, flinty soil, are alike to be avoided.

The strawberry, however, is so retentive of life that it will live in almost any soil; but it will not produce much fruit, unless the remedies are in some way applied to the ungenial soils.

PREPARATION OF THE SOIL.

Clear the ground of weeds, roots, and seeds of all kinds, in preparation of thorough drainage, which in most soils should be attended to the first thing. The best drains are the earthen tile drains, from two to four rods apart, which should be so constructed as to be left open at both ends for the circulation of the air, as well as the release of the stagnant water. A brush or coarse stone drain is beneficial as a temporary expedient.

After draining, break up the soil as deep as possible with a subsoil plough, or by trenching twenty inches or more deep. The strawberry is so sensitive to drought and stagnant water, that very little of the best land of our country can be exempt from draining and trenching, if we would receive in return uniformly large crops of fruit in all seasons.

Inasmuch as the fruit is composed of so large a proportion of potash, soda, and lime—sixty-two parts in every hundred, as will be seen in the tables in this work giving the analysis of the strawberry and plant—we recommend next, that an application to the acre be made of twenty to thirty bushels of unleached or leached ashes, ten to twelve bushels of lime—either stone or oystershell—with two or three bushels of salt, which should be thoroughly mixed with the soil if possible, some weeks before the plants are set out. A liberal handling of the soil, thoroughly pulverising it, before proceeding to the work of transplanting, is good economy.

MANURES.

On this point we are aware we shall differ widely from some of our ablest horticulturists, to whom we confess our inferiority in most things, in the great science of horticulture; yet in this we are confident that their own personal experiments, did their time permit, would lead them to the same result that we have deliberately arrived at.

And first, we would not use animal or barn-yard manures for strawberries. We have eschewed their use entirely for the last six years. If friends who have watched our beds for years, say the soil was peculiar, and is not a fair test, we answer, that may be, but we have arrived at this positive conclusion from our experiments and observations in other locations and soils, as well as in our own garden, and every step has only confirmed us in the opinion, that animal manures are too stimulating and exciting to the plant for the full bearing properties of the strawberry.

Fine fruit has been raised, we know, in fair quantities and of enormous size, in the use of animal manures, yet we think the quantity and quality would have been decidedly increased by the use of vegetable instead of animal manures. The latter causes the plant to run too much to vines, and start its runners before it has even perfected the earliest part of the first crop of fruit, besides filling the earth generally with seeds and undecayed portions of the straw, and fibrous portions from the barn yard, which come into injurious contact with the numerous fibrous roots of the plant in its progress in the earth, which should always be kept as pure for the strawberry as possible.

Leaf-mould, decomposed turf or peat, well composted with new surface soil, or muck, ashes and lime, is a good manure for the strawberry. We wish it, however, distinctly understood that few good soils need enriching at all for the strawberry; on the contrary, most of the soils (for instance, those in Western New York) would be more benefitted by being depleted by an admixture of half river sand.

It will be seen from the interesting articles in our Appendix A, from C. F. Peabody, Esq., near Columbus, Georgia, that his own observations and experience have led him to the same conclusions. Other cultivators might also be named, who have arrived at similar results.

It is far better to feed the fruit properties instead of the plant; for we opine it will be found that the over-feeding of the strawberry is one of the most universal and destructive errors in its cultivation.

Some use liquid manures, composed of cow and hen droppings dissolved in a barrel of water; but they are not well adapted to assist the fruitbearing properties of the plant, but are good if the object be to send out runners and increase the plants.

On the opening of spring—the latter part of April or the 1st of May, in the latitude of the State of New York—it is well to give the plants an impetus by liberally showering them every ten days or two weeks with a solution, in six gallons of water, of one quarter of a pound each of sulphate of potash, sulphate of soda, (Glauber salts) and nitrate of soda, with one and a half ounces of sulphate of ammonia; or, if these cannot be conveniently obtained, use the same quantity of potash, sal soda, Glauber salts, and sal or muriate of ammonia; or a solution of either of them will be beneficial if applied alone.

We have tried for many years various combinations in solution, but have been unable to obtain any so valuable as the first named.

We have always found plaster injurious to the strawberry, and ashes beneficial, when judiciously applied.

SEEDS—QUANTITY TO BE SOWN, &c.

The following estimate of the quanties of different kinds of garden seeds required to produce a certain number of plants, or to plant a certain quantity of ground, is copied from an agricultural exchange:

Asparagus.—One ounce will produce about 1,000 plants, and requires a seed bed about twelve square feet.

Asparagus Roots.—1,000 roots will plant a bed four feet wide and from 200 to 250 feet long, according to the distance apart the plants are placed in the row.

Beans.—English Dwarf.—One quart of seed will plant from 100 to 150 feet of row, according as the sorts may be early or late.

Beans.—French Dwarf.—One quart will be sufficient for about 350 hills, and the same quantity will plant from 250 to 300 feet of row.

Beans.—Pole.—One quart of Lima, White dutch

or Scarlet Runners, will plant about 300 hills, or 250 feet of row.

Beets.—When sown as gardeners generally sow it it requires at the rate of ten pounds to an acre. one ounce will suffice for about 150 feet of row.

Brocoli.—One ounce will produce from 2,500 to 3,000 plants, and require a seed bed of about forty square feet.

Brussels Sprouts.—The same as Brocoli.

Cabbage.—Early sorts the same as Brocoli; the late and Savoy sorts will require a seed bed of about sixty square feet.

Cauliflower.—The same as the later sorts of Cabbage.

Carrot.—Three to four pound are required to an acre, and one ounce will sow about 200 feet of row.

Celery.—One ounce of seed will produce about 7,000 or 8,000 plants, and require a seed bed of about eighty square feet.

Cucumber—One ounce of seed will be required for about 150 hills.

Curled Cress—One ounce of seed will sow a bed containing sixteen square feet.

Egg plant.—One ounce if properly managed in the seed bed, will produce from 2,500 to 3,500 plants.

Kale.—The same as Brocoli.

Endive,—One ounce will produce about 3,500 plants and require a seed bed about eighty square feet.

Leek.—One ounce produces about 2,000 or 2,500 plants, and requires about 60 square feet of seed bed.

Lettuce.—One ounce will require a seed bed of about 120 square feet, and will produce 6,000 or 7,000 plants.

Melon.—One ounce will be quite sufficient for about 120 hills.

Nasturtium.—One ounce will sow 25 feet of row.

Onion.—From four to five pounds are required for an acre, when raised for the bulbs; one ounce will sow about 200 feet of row.

Okra.—One ounce will sow about 200 feet of row.

Parsley.—Six or seven pounds are required to the acre; one ounce will sow about 200 feet of row.

Parsnip.— From five to six pounds are generally sown per acre; an ounce will sow about 250 feet of row.

Peppers.—One ounce will produce about 2000 or 2,500 plants.

Peas.—From one to twe bushels are required to an acre; one quart of the smaller sorts will sow about 120 feet of row, and of the larger sorts one quart will sow about 200 feet of row.

Pumpkin.—One quart of the common field sorts will plant from 500 to 600 hills, and, of the finer garden sorts, one ounce will plant, about fifty hills.

Radish.—From twelve to fourteen pounds of the early spring sorts are required to an acre, if sown broadcast; but half that quantity is sufficient if sown in drills. Of the latter sorts five pounds to the acre, in drills, are sufficient. One ounce will sow about one hundred square feet.

Salsify.—From five to six pounds are generally allowed to an acre. One ounce will sow about 150 feet of row.

Spinage.—Cultivated in drill, from seven to eight pounds to the acre are sufficient; if sown broadcast double that quantity. One ounce will sow about 200 feet of row.

Squash.—One ounce will plant from fifty to eighty hills, according to the sorts and size.

Tomato.—One ounce will produce about 2,000 or 3,000 plants, and require a seed bed of about eighty square feet.

Turnip.—From one or two pounds are generally allowed to an acre; one ounce will sow 2,000 square feet.

Water Melon.—One ounce will plant from 40 to 50 hills.

AGRICULTURAL SEEDS.

Quantity varying according to the soil, and whether sown in drills or broadcast.

Wheat,	5	to 8	pecks	per acre.
Rye,	5½	to 6	"	"
Oats,	2	to 4	bush	"
Barley,	1½	to 3	"	"
Millet,	¾	to 1½	"	"
Broom corn,	1	to 1½	"	"
Indian corn for soiling,	3	to 4	"	"
Peas, broadcast,	2½	to 3½	"	"
" in drills,	1	to 2	"	"
Beans, broadcast,	2	to 3	"	"
" in drills	1	to 2	"	"
Buckwheat,	1	to 3	"	"
Timothy,	12	to 20	quarts	"
" with 6 to 10 pounds clover,	8	to 10	"	"
Red top,	16	to 24	"	"
Blue grass,	10	to 15	lbs.	"
Rye "	10	to 16	"	"
Tall oat grass,	12	to 16	"	"
Orchard grass,	20	to 30	"	"
Red clover,	8	to 16	"	"
White "	2	to 4	"	"
Lucerne, broadcast,	3	to 12	"	"
" in drills,	12	to 18	"	"
Sanfoin, broadcast,	1	to 5	bush.	"
" in drills,	2	to 3	"	"
Potatoes,	15	to 20	"	"
Turnips,	1½	to 3	lbs.	"
Carrots, broadcast,	4	to 5	"	"
" in drills,	2	to 3	"	"
Parsnips, broadcast,	6	to 8	"	"
" in drills,	4	to 6	"	"
Beets in drills,	4	to 5	"	"
Kohl Rabi,	2½	to 2½	"	"
Rape, in drills,	2	to 3	"	"
" broadcast,	4	to 7	quarts	"
Mustard for seed,	8	to 12	"	"
" for ploughing under,	12	to 20	"	"
Hemp,	1½	to 2½	bush.	"
Flax for seed,	4	to 6	pecks	"
" for fibre,	8	to 10	"	"
Teasels,	1	to 2	"	"
Rice,	2	to 2½	"	"

WEIGHTS.

Of sundry Agricultural Products, and other articles of use to the Farmer.

Wheat,	60	lbs.	per bush.
Shelled corn,	56	"	"
Rye,	58	"	"
Oats,	32	"	"
Barley,	47	"	"
Clover,	60	"	"
Timothy,	45	"	"
Flax seed,	56	"	"
Hemp,	44	"	"
Blue grass,	14	"	"
Buckwheat,	48	"	"
Peas,	64	"	"
Beans,	63	"	"

Communications.

SUGGESTED IMPROVEMENT IN THE MANNER OF APPOINTING THE JUDGES FOR THE PROVINCIAL SHOW.

(*To the Editor of the Canadian Agriculturist.*)

Sir,—While all would desire to acknowledge the ability and care which have been shown in the general management of the Provincial Exhibitions, and the triumphant results of those great annual meetings, may I be permitted to suggest that the method hitherto adopted of appointing the Judges has not been quite satisfactory, and might with advantage be altered. Many seem to think that it would be better if the Judges of the thoroughbred stock and dairy produce could be named some time previous to the Exhibition, and that their appointment might best be left with the Council of the Association. Perhaps some such method as the following could be practically carried out:—

Let each County Society forward annually to the Secretary of the Association, in March, a certain number of names of thoroughly competent Judges, stating what they are qualified to judge, who will promise if nominated to give their services, but taking care not to recommend persons for any department in which they themselves intend competing. From such lists let the Council of the Association select and appoint those who are to serve as Judges, duly notifying by a circular all the parties of their appointment, and if any of the same should be prevented by sickness from giving their attendance; such vacancies might be filled up at the meeting of the Directors on the Wednesday morning, just before the Judges proceed to their duties. It would be for the Council of the Association to consider the propriety of paying the Judges so much per diem for their services.

While many men of enterprize are importing into the Province so much valuable stock, and occasionally bring those two hundred miles to compete at our great Provincial meetings, no effort should be spared to preserve that feeling of perfect confidence in the efficiency and impartiality of the Judges appointed.

I am, Sir,

Your most obedient servant,

George Alexander.

County of Oxford,
16th April, 1855.

Miscellaneous.

THE OLD COTTAGE CLOCK.

BY CHARLES SWAIN.

Oh! the old, old clock, of the household stock,
Was the brightest thing and neatest;
Its hands, though old, had a touch of gold,
And its chime rang still the sweetest:
'Twas a monitor too, though its words were few,
Yet they lived, though nations altered;
And its voice, still strong, warned old and young,
When the voice of Friendship falter'd;
Tick—tick! it said: quick, quick to bed;
for ten I've given warning:
Up, Up—and go—or else, you know,
you'll never rise soon in the morning!

A friendly voice was that old, old clock,
As it s ood in the corner smiling,
And blessed the time with a merry chime,
The winter's hours beguiling:
But a cross old voice was that tiresome clock,
As it called at day-break b.ldly,
When the dawn looked grey o'er the misty way,
And the early air blew coldly:
Tick, tick it said; quick, out of bed,
For five I've given warning;
You'll never have health, you'll never have wealth,
Unless you're up soon in the morning!

Still hourly the sound goes round and round,
With a tone that ceases never;
While tears are shed for the bright days fled,
And the old friends lost for ever!
Its heart beats on—though hearts are gone
That warmer beat and stronger;
Its hands still move—though hands we love
Are clasped on earth no longer!
Tick—tick! it said: to the churchyar! bed;
The Grave hath given warning:
Then up and rise, and look to the skies,
And prepare for a heavenly morning.

WILLOW PLANTATIONS.

[The following article on the cultivation of Willow for Basket Making &c., has been issued from the Agricultural Warehouse of Messrs. Parker, White & Gannett, Boston. Massachusetts, who will supply cuttings for five dollars a thousand, and the necessary information for the planting arrangement of Osier-beds The subject is not without interest in Canada, where large importations of Osiers and baskets are annually made. With very little trouble we might readily grow all the material for domestic consumption, if not for exportation:—Ed.]

The Culture of Willow for Osiers.—When its principles are well understood, is not difficult. and the profits. under good management, are very great. The fear that the supply may soon overreach the demand is not only groundless, but on the contrary. it is susceptible of proof, that for a long time to come, the demand must increase far beyond the proportional increase of production in this country. It is about fifty years only since England received almost her entire supply from the continent. The long continued wars cut off this supply and the deprivation was so severely felt that it became a matter of national concernment, and premiums were rewarded for the formation of Willow Plantations. Men of every degree of means and of all ranks engaged in it, and its cultivation extended very rapidly, [the Duke of Bedford having a plantation of one thousand acres, yet to the present time prices have not declined, but rather advanced. "Sang," in his "Osier Plantations,' stating from his own knowledge, says, "some good plantations have yielded annually, for several years a profit of £25 to £30 sterling. per acre; some as high as £40 £45- In 1852, from reliable information from different quarters, the *good* plantations yield from £30 to £40 net profit." American fields are equally productive, and prices in New York, and Philadelphia about twenty per cent higher. The French Osiers sell now at $120 per ton, and the Belgian at about $140. which is lower than it has been for eighteen months past.

A great discouragement arose at the commencement of willow culture in this country. from the failure of the most vigorous kinds of European willows to produce good Osiers—many of their most popular varieties being nearly worthless here. Among those that have proved to be good and adapted to our climate the following may be named :—

Viminalis.—It is the opinion of nearly all engaged in the cultivation or manufacture of basket willow, that this is one of *the best* varieties for all purposes, particularly for work that requires long, slender, unsplit wands. of great toughness. It has very small leaves, and shows no marks of the buds after the bark is removed. On good land it grows to be 8 or 10 feet high.

Purpurea. or Bitter Purple Willow.—Valuable in all respects as an Osier. The intense bitterness of its bark and leaves renders it exempt from the attacks of beasts and insects, and consequently adapted for making live fences. Lasting fences, very ornamental and profitable, may be made of it, producing a crop of Osiers yearly. This may be characterized as the "Elegant Willow," its leaves and shoots considered; but Triandra is the most ornamental, having very showy catkins.

Caprea.—This makes a good Osier, and grows better on dry land than most others. Its catkins make a very beautiful appearance, and in consequence of their flowering early, they are used for feeding hens.

Triandra.—It is perfectly hardy, thrives in a great variety of soils, and is as productive here as any European willow in its own country. Its rods are long, slender, tough and pliable, and particularly adapted for all kinds of split work requiring those qualities. It is very ornamental, having showy catkins.

Forbyana.—Another very valuable one in all respects.

Alba.—Makes a tolerable good Osier. more particularly adapted for split work, and being a strong, rapid grower, with horizontal branches, is used for live fences. A growth of three years will make a substantial barrier, and will yield an annual profit from the trimmings. Cuttings set for this purpose, require to be larger than when put out in a plantation, the usual length being 2½ to 3 feet.

The observations and experiments through which we arrive at these facts, were made at Fishkill and Newburgh, N. Y. Jamesville, Vt., and Hingham, Mass.

To plant an acre, from 10,000 to 12,000 cuttings are required. Those of vigorous growth possess more vital energy than those of lowland production, and make the most healthy and productive plantations. Cuttings are used from 8 to 14 inches in length,—10 or 12 inches is probably the best for deep soils, and not more than 8 on very retentive soil: not more than 3 inches should be left out of the ground. They are set in rows, three feet apart, and from twelve to sixteen inches distant in the rows. The first two crops will be in proportion to the number of cuttings, but after four or five years, they will entirely occupy the ground, even if more than 16 inches apart but when the value of the early crops is considered. 12 inches will be found to be the most economical distance.

Willow will grow in any soil. thrive in a great variety of soils, but gives its best returns only in such as are suited to its habits.

It is a lover of moisture, but does not tolerate standing water, or soil sodden with water nearer than within one foot of the surface, during the warm, growing season. Overflowing in winter is not objectionable, nor is overflowin from a freshet in summer, that soon passes off. A deep, rich, sandy loam diluvial and alluvial, such as constitutes many bottoms not so much elevated above the stream that winds through them, that by diving down in the previous soil two or three feet in midsummer, the roots cannot find moisture—if kept clear of rampant weeds, will give an astonishingly vigorous growth, yielding *three or four ton per acre.* The occasional overflowing, that would render such of little value for crops would be rather advantageous to willow. Any retentive soil, rich and deeply worked, any clay, freed from water by draining, if necessary, will give great returns as Osier fields. Deep, alluvial soil, that has not water standing on its surface, or near it in summer, is excellent; so is drained swamp. when brought under cultivation. A low, level bottom, from which a crop has just been removed, in the spring properly prepared and planted, would on and after the second year, give a nett per centage on investment that nothing else can approximate, and with a certainty that pertains to no other crop.

Many of the growers of willow in England, employ land for which they pay a price annually for rent and taxes, which would purchase the fee simple of a piece of ground as eligible in this country.

Cuttings must be prepared in fall or winter, but, to avoid being thrown by frost, not planted till spring if necessary they may be kept in a cool place until last May, without injury, but April or May is preferable for planting, or soon as warm weather opens.

Whenever it is practicable, the ground should be deeply worked; fields that have been previously cultivated will have the advantage of easy tillage, but where the ground is soft and wet, and rich, simply turning over the sward with large, deep furrows and following with sub-soil plough will give perhaps as good a growth of willows as any other preparation. The surface should be as level as possible before setting the willow, on account of convenience in cultivation. The entire cultivation required the season, is such as would be given to a crop of corn, and may be chiefly done with a cultivator, on land that is so firm as to admit the travelling of a horse; but simply keeping the weeds down, in ground that is too soft is so often all that is required. A machine has recently been invented by Mr. Cobby, of Jonesville, Vt., which strips the bark from the wands with great rapidity, saving more than half the cost of preparing the Osiers for market by the present mode.

BOXES FOR MELONS.

As I have a way to make boxes to preserve melons or cucumbers from bugs, not in common use, I will give you a description of it.

Take common wrapping-paper or newspaper, cut into strips two feet long, and eight inches wide. Then take pine sticks one-half inch in diameter and a foot in length. Split your sticks three-fourths of their length, being careful not to split them entirely apart. Double your paper so that it will be but three inches wide; take each end of your paper and put it together so as to form a ring, and pull your stick apart enough to insert each end of your paper, which will hold it in the form of a ring; take your paper and stick to the hill of melons and stick the split end of the stick in the ground; have some small sticks to place inside of your paper to hold it in its place, and bank it up around the bottom so that the bugs cannot crawl under the paper, and your box is completed.—*R. N. Yorker.*

CORN-CARRYING ON THE RUSSIAN STEPPES.

In order to judge at what cost the most important of those exports are thus brought, and in order to enable an inquirer to predict with any approach to certainty what could be done under the pressure of the most extraordinary temptation from without, let us leave the sharp stones, deep mud, or clouds of dust of Odessa, and examine the tracts along which those long line of bullock waggons come creaking from more northerly directions. I have said that a vast belt of Steppe girdles this coast. We are upon a Steppe. The prevailing colour, as far as the eye can reach over the immense plain, is a scorched brown. The intense heat and drought have reduced the Steppe to this condition, and far beyond the horizon line, and away, verst upon verst, is the same dreary looking and apparently waste expanse. Not that it is all flat—hills, barren and rugged, diversify the line, and add to its difficulties, in dry weather considerably, in wet incalculably. For look at the ground on which you stand. You are on one of the roads as they are termed. Elsewhere, a road, good or bad, means something which has been *made*—a line, upon which has been gathered material for binding and clasping, and below which there is some kind of draining; bad or good, the road is, as compared with the adjacent land, dry, compact and elastic. Dismiss all such ideas from your mind, or rather drag your limbs for an hour behind that corn-waggon, and such ideas will disappear of themselves. Dead and helpless seems that wobegone track, creaking and drawling over which comes the bullock-waggon—all wood, and built precisely as waggons were built a thousand years ago. The driver sits in front, occasionally lashing the grey bullocks more by way of form than with any idea of hastening them, and his massy beard hangs down over a species of censor, whence arise fumes of an unsavoury kind. But it is not in luxury, or in imitation of his eastern neighbours, that the peasant keeps this odour-breathing vessel under his nose—the contents are an abominable mixture for greasing the wheels of his waggon, and by which you may track it through many a yard of tainted air. Why he has placed the reeking vessel between his legs I know not, unless it be to remind himself more forcibly of the necessity of an operation, without the incessant performance of which his clumsily built cart would be on fire in four places at once. Contrast this wretched machine with the well contrived, iron mounted cart of the German colonist, a few miles hence But on goes the waggoner, jolting and creaking along the unhelpful soil, and singing some of those old airs in which, rude as they are, there is some melody, or saying prayers to one or other of the multifarious national saints. On he goes and so he and his predecessors have gone since corn was grown in Russia. Ricketty carts, knotted rope harness, drowsy bullocks, wretched roads—so crawls the loaf towards the Englishman's table.—*Shirley Brookes, A year in Russia.*

ENGLISH AND AMERICAN HOTELS.

We could hardly picture to ourselves a greater contrast than that between an old country and an American hotel. The two things are not in the least alike. Arriving at an Inn in England, you are treated with an immense deference; allowed the seclusion of a private apartment, charged exorbitantly for every thing, and, at departure, curtisied and bowed out at the door, as if a prodigious favor had been conferred on the establishment. In the United States, things are managed differently. The Americans, with some faults of character, possess the singular merits of not being exclusive, extortionate, or subservient. But where all travel, hotel keepers can afford to act magnanimously. Instead of looking for livelihood from few customers, scheming petty gains by running up a bill for use of candles, firing and other conveniences, and smoothing every thing over by a mercenary bow, the proprietor of an American hotel is a capitalist at the head of a great concern, and would despise doing any thing shabby; hundreds pour in and out of his hotel daily; he notices neither your coming nor going; without ceremony you are free of the establishment; and when you pay and depart, there are no bows, no thanks, but you are not fleeced; and that is always felt to be a comfort. —*Chamber's Notes in America.*

TAKE CARE OF THE TREES.—Canker worms will soon begin to ascend the trees, unless proper means are speedily taken to prevent it. Small leaden troughs filled with oil, and encircling the trunks are a good preventive. The increased crop will amply repay the expense.

THE CLIMATE OF THE CRIMEA.

A trustworthy account of the South Crimea is to be found in the writings of Pallas, the great Russian botanist, who lived at Akmetshet. or, as it is now called, Simpheropol. In one of his works the author says:—

"The mildest and most fruitful region in all the Russian Empire is that continuation of valleys arranged in a natural amphitheatre at the southern base of Taurida (the Crimea) along the coasts of the Black Sea. The climate is little different from that of Anatolia and Asia Minor; winter is hardly felt, the primrose and the crocus appear above the ground in the month of January, and the oak retains its green foliage throughout the year. No part of Taurida, perhaps of the whole Empire, affords the Botanist a greater variety of plants, or the husbandman a richer harvest. The ever-verdant laurel grows beside the olive, the pomegranate, the fig, or the date tree, which might have been brought to the country in ancient times by Greek colonists. The manniferous ash, the mastich, the sumach, the bladder-nut. the sage-leaved cistus, the emerus and the arbute of Asia Minor flourish in open air. The walnut and almost every kind of fruit tree thrives in the woods or rather the natural gardens in the valleys. The Caper bush is scattered along the coast, the wild vine reaches to the tops of the highest trees, descends again to the ground, and forms, with the vibusnum, festoons and garlands. High hills, masses of rocks, streams and cataracts, verdant fields and woods, and the sea that bounds the horizon, renders the landscape equal to any imagined or described by poets. The simple life of the good Tartars, their cottages cut in the solid rock and concealed by the thick foliage of surrounding gardens, the flute of the shepherd, his flocks scattered on solitary hills, remind the stranger of the golden age. The traveller leaves the people with regret, and envies the destiny of mortals ignorant of war, the frauds of trade, and luxuries accompanied with all its vices."

Although there is a dash of fine writing in this statement, the facts included in it give the botanist satisfactory proof that the winter of the South Crimea has little to be dreaded. Where the olive and the caper bush, the mastich tree and the fig-tree find themselves at home, there can be no serious cold. The caper bush more especially affords unmistakeable evidence of a climate where a hard winter is unknown, and we know from other authority than that of Pallas that it is an extremely common plant: in fact, the capers of the Crimea are a common article of sale in the southern provinces of Russia.

It is undoubtedly true, that occasionally there are exceptional winters. Pallas himself informs us that in 1747 the frost was so intense during the most boisterous north winds, that not only the whole Sea of Azof, together with the Bosphorus, but also a great part of the Bay of Kaffa and several creeks of the Black Sea were covered with ice sufficiently strong to support the weight of persons crossing both on foot and horseback. But this seems to have occurred on the north-eastern coast—the southern shore from Balaklava to Alouptka is sheltered from these cold winds, and it is there that we presume the troops will winter.—*Gardener's Chronicle.*

Editorial Notices.

Sale of Short Horns, &c.—We direct the attention of our readers to the advertisement of Col. J. M. Sherwood, whose sale of Short Horns, South Downs and Suffolk hogs, will take place on the 20th of next month. Col. S. is an extensive breeder, of established reputation.

Flax.—We request the attention of our readers to the excellent article on "Flax" in the present number, for which we are indebted to Wm. Hutton, Esq., Secretary of the Bureau of Agriculture, Quebec.—*B.*

Prospect of Wheat Crops.—After a brief visit to the adjoining townships, we are able to state, that at this season the wheat crops look most promising. We learn that Winter has left the crop throughout Upper Canada in a very favourable condition. Our exchanges from the United States, especially the more Western, represent the prospects of an abundant wheat harvest as never more encouraging.

Notice.—The Office of the *Agriculturist* is removed to the building occupied by Messrs. McIntosh & Walton, Agricultural Implement Dealers, corner of Yonge and Adelaide Streets.

The Female Emigrants' Guide, and Hints on Canadian Housekeeping, By Mrs. C. P. Traill Authoress of the "Backwoods of Canada" "Forest Gleanings," "The Canadian Crusoe," &c., &c. Toronto, Maclear & Co.; and sold by all the principal Book-sellers. 1855.

This is a cheap and valuable litt'e work from the pen of a Lady, favourably known in the walks of Literature, and who has resided many years in Canada. The work is adapted to meet the wants of a more numerous class of readers than its title denotes, and we purpose to examine its contents more in detail hereafter. In the meantime, we strongly recommend it as an interesting and valuable production.—*B.*

Markets.—Being crowded for space we omit a detailed report of market prices in this number. There is little coming into the market at the present season, except wheat and Flour, and prices of other products vary so much as the season advances, that the omission will be of little consequence. Wheat has been selling for some days in the Toronto market as high as 11s 3d per bushel. Flour from 50s to 51s 3d.

The Reciprocity Treaty has, no doubt, contributed at least 15 per cent of these high rates.

ENGLISH CATTLE

IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,

Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs. BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commi sion Charged.

Horse,	each,	$80
Bulls or Cows,	"	6
Ram or Ewe,	"	3
Three Sheep from the same owner,	each,	2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner,	each,	22
Ten " "	"	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses, &c., as follows:

Horse,	each,	$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer, provision for 30 days.

Horse,	each,	$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Ves els.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels, provision for 60 days

Horse,	each,	$70
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and Col. Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased, by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

Breed.	Horse.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel.	If insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

			$.	$.	$.
Thorough Bred Horses, from		-	1000 to	2000	12000
Short Horn or Durham Bull		-	400 "	1500	700
Do	Cows	-	200 "	800	400
Do	yearling Bull	-	200 "	1 00	500
Do	do Heifer	-	175 "	400	250
Herefords	Bull	-	300 "	800	500
Do	Cows	-	200 "	600	250
Devons	Bull	-	300 "	800	400
Do	Cows	-	200 "	500	250
Ayrshire	Bull	-	150 "	300	300
Do	Cows	-	150 "	250	200
Alderney	Bull	-	150 "	225	175
Do	Cows	-	100 "	150	125
				Will weigh when killed and dressed	Will shear of washed wool
Cotswold Sheep	Ram	-	100 to	300 13 lbs	125 12to15lbs
Do	Ewe	-	25 "	100	30
Leicester Sheep	Ram	-	100 "	200 120lbs	100
Do	Ewe	-	20 "	80	25
South Down Sheep	Ram	-	100 "	300 112lbs	125 6 to 9lbs
Do	Ewe	-	25 "	100	30
Hampshire do	Ram	-	75 "	125 12 lbs	1 0 6to10lbs
Do	Ewe	-	15 "	25	25
Swine	Boars	-	25 "	50	40
Do	Sows	-	15 "	40	25
Merino Sheep from Spain					
Mules from Spain.					

5

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture of Upper Canada, No. 1, Vol. 1st, pp 160. Toronto: printed and published by Thompson & Co., for the Board of Agriculture

This work will be issued in quarterly parts, four of which will form a volume. The first part embodies the transactions of this Provincial Association from its institution in 1846, down to the commencement of the year 1851. The next number will contain an account of the further proceedings of the Association and the Board of Agriculture, Prize Essays, Abstract of County Reports, &c.

The work will be sent free by post for 5s per annum. All communications and remittances to be addressed to the Secretary of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855. 5.

THOROUGH-BRED DURHAM BULL

FOR SALE.

THE well-known Bull, "Wheat-ear," from the herd of the Hon Adam Ferguson. A Pedigree will be given. For particulars apply to

JAMES SCARFF,
Secretary, County of Oxford Agricultural Society.

Woodstock, 24th April, 1855. 5-1t

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and attle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at obourg in October next, that persons desiring to register stock should do so at an early date, as all animals for wh ch Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND. *Secretary.*

Office of the Board of Agriculture
Toronto, March, 1855.

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision

A man and three boys can turn out from 5, 0 to 1 ,' 0 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £5 , (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,

Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

LAKE-VIEW NURSERY.

THE Subscriber offers for sale the present Spring, a very choice assortment, of Fruit and ornamental Trees, Flowering Shrubs, Roses, Dahlias, Green House, and bedding-out Plants, Fruit Tree Stocks, Hedge Plants, and a general assortment of Nursery Stuff. His Stock of Dwarf Fruit Trees, will be found very complete, bearing Trees of which can be furnished to order. Orders respectfully solicited.

☞ Descriptive Catalogues can be had on application.

JOHN GRAY

Lake-view Nurseries, Toronto, 1855.

PURE-BRED ANIMALS.

AT PRIVATE SALE,

Mount Fordham Westchester Co., 11 miles from City Hall, New York, by Harlem Railroad.

HAVING completed the sale of animals, as advertised in Catalogue of 1854, (excepting Short Horned bull "*Balco*" 9918), at prices highly remunerative, for which patronage I feel grateful, not only to the public of almost every State in our Union, but to the anadas, Cuba, and the Sandwich Islands; *I will issue about the 1st of April a catalogue for* 1855, of short Horned Bulls, and alves (some of which belong to my friend, and part associate Mr N J Becar) North Devon Bulls and Bull alves, Southdown Rams, Suffolk, Berkshire, and Essex Swine, of almost all ages, and of both sex, now ready for delivery This catalogue will be illustrated with portraits of my Prize Animals. Most of the original animals of my breeding establishment were selected by me in England in person, and strictly in reference to quality, *in my judgment*, best adapted for the use of this country.

L G. MORRIS.

January 31th 1855.

DURHAM BULLS.

THE SUBSCRIBER has several yearling Durham or Shorthorn Bulls for sale from the most renowned breeds ever imported in this country. Parties wishing to purchase will please call.

P. FISHER.

Nelson, 25th Jan., 1855. 2-3

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second Breed by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds ; of grade, 5 s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (1621 English Herd Book), was sold in 18 3 for $4,000.

FREDERICK WM. STONE.

Guelph, April 24, 185 .

Sale of Imported Short Horned Cattle, South Down Sheep and Suffolk Hogs.

I WILL sell by Auction at my residence on Wednesday 20th June next, my entire Herd of Short Horned Cattle—consisting of about Twenty-five head of my choice animals. Nearly the whole of them are Imported, and their direct descendants.

Also about Seventy-five South Down Sheep. There are imported from the flock of Jonas Webb, Esq., of England, and their decendants.

Also, a few Suffolk Hogs, bred from the importation of J. C. Jackson, Esq.

Catalogues, with the pedigrees and further particulars ,will be ready about 2 th April, and can be had at the Offices of the different Agricultural Papers in this State, and Ohio Cultivator and Indiana Farmer, and by application to me.

TERMS OF SALE.—For all sums under $100, cash ; over $100 to $1 0, three months ; over $15 to $30 , six months ; and all over 30 , six or twelve months credit, on approved notes with interest.

J. M. SHERWOOD.

April 5, 1855 Auburn, N. Y.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturists and Horticulturist, that they have received a large and varied assortment of

FARM & GARDEN IMPLEMENTS

And would solicit a call from parties about to purchase, at No. 77, corner of Yonge and Adelaide streets, Toronto They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand Reaping and Mowing Machines on the most improved principles, will be for sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

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THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VII. TORONTO, JUNE, 1855. No. 6.

Agriculture, &c.

TENTH EXHIBITION OF THE PROVINCIAL AGRICULTURAL ASSOCIATION,

To be held at Cobourg, *on Tuesday, Wednesday, Thursday, and Friday, the 9th, 10th, 11th, and 12th days of October next.*

PRIZE LIST.

HORSES.

CLASS I.—BLOOD HORSES.

Section:	£.	s.
1. Best thorough-bred stallion	8	5
2d do	5	10
3d do	2	15
2. Best thorough bred 3 year old Stallion	5	10
2d do	3	10
3d do	1	15
3. Best thorough-bred 2 year old Stallion	3	10
2d do	2	10
3d do	1	5
4. Best thorough-bred yearling colt	2	0
2d do	1	10
3d do	1	0
5. Best thorough-bred 3 year old Filly	4	10
2d do	2	15
3d do	1	15
6. Best thorough-bred 2 year old Filly	3	10
2d do	2	5
3d do	1	5
7. Best thorough-bred yearling filly	2	10
2d do	1	10
3d do	1	0
8. Best thorough-bred Mare and and Foal	5	10
2d do	3	10
3d do	1	10
9. Extra Entries		

Pedigree to be produced in this class.

CLASS II—AGRICULTURAL HORSES.

Sect.	£	s.
10. Best Stallion for Agricultural purposes	8	5
2d do	5	10
3d do	2	15
11 Best Heavy Draught Stallion	8	5
2d do	5	10
12 Best three year old Stallion	5	10
2d do	3	10
3d do	1	15
13 Best two year old Stallion	3	10
2d do	2	10
3d do	1	05
14 Best yearling colt	2	10
2d do	1	10
3d do	1	0
15 Best three year old filly	4	10
2d do	2	15
3d do	1	15
16. Best two year filly	3	10
2d do	2	5
3d do	1	5
17. Best yearling filly	2	0
2d do	1	10
3d do	1	0
18. Best Brood Mare and Foal, or evidence that the foal has been lost	5	10
2d do	3	10
3d do	1	10
19. Best span Matched Carriage Horses	5	0
2d do	3	15
3d do	2	10
20. Best span of Draught Horses	5	0
2d do	3	15
3d do	2	10
21. Best saddle Horse	2	10
2d do	2	0
3d do	1	10
22. Best single Carriage horse in harness	2	10
2d do	2	0
3d do	1	10
23. Extra Entries.		

CATTLE.

CLASS III.—DURHAMS.

	£	s.
24. Best aged Bull 5 years old and upwards	£10	0
2d do	6	0
3d do	4	0
4th do	2	0
25. Best 4 years old Bull	9	0
2d do	6	0
3d do	4	0
4th do	2	0
26. Best 3 years old Bull	8	0
2d do	5	0
3d do	3	0
4th do	1	10

Sect.		£	s.
27. Best 2 years old Bull		6	0
2d	do	4	0
3d	do	2	5
4th	do	1	5
28. Best 1 year old Bull		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	0
29 Best Bull Calf (under one year)		4	0
2d	do	2	10
3d	do	1	10
4th	do	0	15
30. Best Cow		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	5
31. Best 3 years old Cow		4	0
2d	do	2	10
3d	do	1	10
4th	do	1	0
32. Best 2 years old Heifer		3	0
2d	do	2	0
3d	do	1	5
4th	do	0	15
33. Best 1 year old Heifer		2	10
2d	do	1	10
3d	do	1	0
4th	do	0	10
34. Best Heifer Calf [under 1 year]		1	10
2d	do	1	0
3d	do	0	10
4th	do	0	5
35. Extra Entries			

N. B.—A Certificate of HERD BOOK PEDIGREES will be required of all animals in the Durham Class. The Pedigrees of others should be as full and correct as possible.

CLASS IV—DEVONS.

36. Best aged Bull, 5 years old and over	£10	0	
2d	do	6	0
3d	do	4	0
4th	do	2	0
37. Best 4 years old Bull		9	0
2d	do	6	0
3d	do	4	0
4th	do	2	0
38 Best 3 years old Bull		8	0
2d	do	5	0
3d	do	3	0
4th	do	1	10
39 Best 2 years old Bull		6	0
2d	do	4	0
3d	do	2	5
4th	do	1	5
40 Best 1 year old Bull		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	0
41 Best Bull Calf [under one year]		4	0
2d	do	2	10
3d	do	1	10
4th	do	0	15
42 Best Cow		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	5
43. Best 3 years old Cow		4	0
2d	do	2	10
3d	do	1	10
4th	do	1	0

Sect:		£	s
44. Best 2 years old Heifer		3	0
2d	do	2	0
3d	do	1	5
4th	do	0	15
45 Best 1 year old Heifer		2	10
2d	do	1	10
3d	do	1	0
4th	do	0	10
46. Best Heifer Calf [under one year]		1	10
2d	do	1	0
3d	do	0	10
4th	do	0	5
47. Extra Entries			

CLASS V—HEREFORDS.

48. Best aged Bull 5 years and over	£10	0	
2d	do	6	0
3d	do	4	0
4th	do	2	0
49. Best 4 years old Bull		9	0
2d	do	6	0
3d	do	4	0
4th	do	2	0
50. Best 3 year old Bull		8	0
2d	do	5	0
3d	do	3	0
4th	do	1	10
51. Best 2 years old Bull		6	0
2d	do	4	0
3d	do	2	5
4th	do	1	5
52. Best 1 year Bull		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	0
53. Best Bull Calf (under 1 year)		4	0
2d	do	2	10
3d	do	1	10
4th	do	0	15
54. Best Cow		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	5
55. Best 3 years old Cow		4	0
2d	do	2	10
3d	do	1	10
4th	do	1	0
56. Best 2 year old Heifer		3	0
2d	do	2	0
3d	do	1	5
4th	do	0	15
57. Best 1 year old Heifer		2	10
2d	do	1	10
3d	do	1	0
4th	do	0	10
58. Best Heifer Calf (under 1 year)		1	10
2d	do	1	0
3d	do	0	10
4th	do	0	5
59. For the Best Hereford Bull of any age not exceeding 4 years, that has served Cows in the Province this season; Prize offered by Baron de Longueuil		20	0

CLASS VI—AYRSHIRES

60. Best Bull		10	0
2d	do	6	0
3d	do	4	0
4th	do	2	0
61. Best 4 years old Bull		9	0
2d	do	6	0
3d	do	4	0
4th	do		0

Sect.		£	s.
62. Best 3 years old Bull		8	0
2d	do	5	0
3d	do	3	0
4th	do	1	10
63. Best 2 years old Bull		6	0
2d	do	4	0
3d	do	2	5
4th	do	1	5
64. Best one years old Bull		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	0
65. Best Bull Calf (under one year)		4	0
2d	do	2	10
3d	do	1	10
4th	do	0	15
66. Best Cow		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	5
67. Best 3 years old Cow		4	0
2d	do	2	10
3d	do	1	10
4th	do	1	0
68 Best 2 years old Heifer		3	0
2d	do	2	0
3d	do	1	5
4th	do	0	15
69. Best 1 year old Heifer		2	10
2d	do	1	10
3d	do	1	0
4th	do	0	10
70. Best Heifer Calf (under one year)		1	10
2d	do	1	0
3d	do	0	10
4th	do	0	5
71. Extra Entries			

CLASS VII.—GALLOWAY CATTLE.

72. Best 5 years old Bull		10	0
2d	do	6	0
3d	do	4	0
4th	do	2	0
73. Best 4 years old Bull		9	0
2d	do	6	0
3d	do	4	0
4th	do	2	0
74. Best 3 years old Bull		8	0
2d	do	5	0
3d	do	3	0
4th	do	1	10
75. Best 2 years old Bull		6	0
2d	do	4	0
4d	do	2	5
4th	do	1	5
76. Best 1 year old Bull		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	0
77. Best Bull Calf [under one year]		4	0
2d	do	2	10
3d	do	1	10
4th	do	0	15
78. Best Cow		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	5
79. Best 3 year old Cow		4	0
2d	do	2	10
3d	do	1	10
4th	do	1	0

Sect.		£	s.
80. Best 2 year old Heifer		3	0
2d	do	2	0
3d	do	1	5
4th	do	0	15
81. Best 1 year old Heifer		2	10
2d	do	1	10
3d	do	1	0
4th	do	0	10
82. Best Heifer Calf [under one year]		1	10
2d	do	1	0
3d	do	0	10
4th	do	0	5
83 Extra Entries			

CLASS VIII.—GRADE CATTLE.

84 Best Cow		5	0
2d	do	3	0
3d	do	2	0
4th	do	1	5
85. Best 3 years old Cow		4	0
2d.	do	2	10
3d	do	1	10
4th	do	1	0
86. Best 2 years old Heifer		3	0
2d	do	2	0
3d	do	1	5
4th	do	0	15
87 Best 1 year old Heifer		2	10
2d	do	1	10
3d	do	1	0
4th	do	0	10
88. Best Heifer Calf [under one year]		1	10
2d	do	1	0
3d	do	0	10
4th	do	0	5
89 Extra Entries			

DIPLOMAS will be awarded to the *Breeders* or *Importers* of Bulls and Stallions which take *First Prizes*, when their name and residences are given.

The Judges shall ascertain, in deciding on Bull Calves in any of the foregoing classes, whether the animal has been suckled or raised by pail, and make allowances accordingly.

A certificate to be produced to show the breeding of animals in Class—VIII.

Young cattle may compete, if the exhibiter thinks fit, in an older class than that to which they properly belong, but no animal will be allowed to compete in more than one of the foregoing classes.

CLASS IX.—FAT AND WORKING CATTLE, ANY BREED

90 Best Ox or Steer		7	10
2d	do	5	0
3d	do	3	0
91 Best Cow or Heifer		7	10
2d	do	5	0
3d	do	3	0
92 Best Yoke of Working Oxen		5	0
2d	do	3	0
3d	do	2	0
93. Best yoke of three years old Steers		4	0
2d	do	2	10
3d	do	1	10
94. Best Team of Oxen, not less than 10 Yoke, from one Township, the property of any number of persons		10	0
95. Extra Entries			

SHEEP.

CLASS X.—LEICESTERS.

Sect.		£	s.
96.	Best Ram, two shears and over	4	0
2d	do	2	10
3d	do	1	0
97.	Best shearling Ram	4	0
2d	do	2	10
3d	do	1	0
98.	Best Ram Lamb	2	0
2d	do	1	0
3d	do	0	10
99.	Best 2 Ewes, two shears and over	4	0
2d	do	3	0
3d	do	1	10
100.	Best 2 shearling Ewes	3	0
2d	do	2	0
3d	do	1	0
101.	Best 2 Ewe Lambs	1	10
2d	do	1	0
3d	do	0	10

CLASS XI.—SOUTHDOWNS.

112.	Best Ram, 2 shears and over	4	0
2d	do	2	10
3d	do	1	0
113.	Best shearling Ram	4	0
2d	do	2	10
3d	do	1	0
114.	Best Ram Lamb	2	0
2d	do	1	0
3d	do	0	10
115.	Best 2 Ewes, two shears and over	4	0
2d	do	3	0
3d	do	1	10
116.	Best 2 shearling Ewes	3	0
2d	do	2	0
3d	do	1	0
117.	Best 2 Ewe Lambs	1	10
2d	do	1	0
3d	do	0	10

CLASS XII.—MERINOS AND SAXONS.

118	Best Rams two shears and over	£4	0
2d	do	2	10
3d	do	1	0
119.	Best shearling Ram	4	0
2d	do	2	10
3d	do	1	0
120.	Best Ram Lamb	2	0
2d	do	1	0
3d	do	0	10
121.	Best 2 Ewes two shears and over	4	0
2d	do	3	0
3d	do	1	10
122.	Best 2 shearling Ewes	3	0
2d	do	2	0
3d	do	1	0
123.	Best 2 Ewe Lambs	1	10
2d	do	1	0
3d	do	0	10

CLASS XIII.—COTSWOLDS.

124.	Best Ram, two shears and over	£4	0
2d	do	2	10
3d	do	1	0
125.	Best shearling Ram	4	0
2d	do	2	10
3d	do	1	0
126	Best Ram Lamb	2	0
2d	do	1	0
3d	do	0	10
127.	Best 2 Ewes, two shears and over	4	0
2d	do	3	0
3d	do	1	10
128.	Best 2 shearling Ewes	3	0
2d	do	2	0
3d	do	1	0
129	Best 3 Ewe Lambs	1	10
2d	do	1	0
3d	do	0	10

CLASS XIV.—CHEVIOTS.

130	Best Ram, 2 shears and over	4	0
2d	do	2	10
3d	do	1	0
131	Best shearling Ram	4	0
2d	do	2	10
3d	do	1	0
132	Best Ram Lamb	2	0
2d	do	1	0
3d	do	0	10
133	Best 2 Ewes, two shears and over	4	0
2d	do	3	0
3d	do	1	10
134.	Best 2 shearling Ewes	3	0
2d	do	2	0
3d	do	1	0
135.	Best 2 Ewe Lambs	1	10
2d	do	1	0
3d	do		10

CLASS XV.—FAT SHEEP.

136.	Best two fat Weathers	3	0
2d	do	2	0
3d	do	1	0
137.	Best 2 Fat Ewes	3	0
2d	do	2	0
3d	do	1	0
138	Extra entries in sheep		

CLASS XVI.—LARGE BREED PIGS.

139.	Best Boar, 1 year and over	£5	0
2d	do	3	0
3d	do	2	0
140.	Best Breeding Sow, 1 year and over	3	0
2d	do	2	0
3d	do	1	0
141	Best Boar of 1855	3	0
2d	do	2	0
3d	do	1	0
142.	Best Sow of 1855	2	0
2d	do	1	10
3d	do	1	0

CLASS XVII.—SMALL BREED PIGS.

143	Best Boar 1 year and over	5	0
2d	do	3	0
3d	do	2	0
144	Best Breeding Sow, 1 year and over	3	0
2d	do	2	0
3d	do	1	0
145	Best Boar of 1855	3	0
2d	do	2	0
3d	do	1	0
146	Best Sow of 1855	2	0
2d	do	1	10
3d	do	1	0
147	Extra Entries.		

In this class the *precise age* of the animal is to be *stated on the cards.*

With the view of encouraging largely the importation of improved stock, the exhibiter of any male animal imported into this province from Europe since the last exhibition, which shall take the first prize in any of the above classes, will be paid three times the amount of the premium offered in the list; the exhibiter of any female animal imported from Europe with the same time taking the first prize will

be paid double the amount offered: the exhibiter of any male animal imported into the Province from any part of America within the same time taking the first prize will be paid double the amount of prize offered; and of any female animal imported within the same time, and taking the first prize one half the amount of prize offered, in addition to that in the list. Such animals to be the bona fide property of persons residing in Upper Canada.

CLASS XVII.—POULTRY.

Sect.	£	s.
148 Best pair of white Dorkings	1	0
2d do	0	10
149 Best pair of Spangled do	1	0
3d do	0	10
150. Best pair of black Polands	1	0
2d do	0	10
151. Best pair of white Polands	1	0
2d do	0	10
152. Best pair of golden Polands	1	0
2d do	0	10
153. Best pair of Silver Polands	1	0
2d do	0	10
154. Best pair of Game Fowls	1	0
2d do	0	10
155. Best pair of Jersey Blues	1	0
2d do	0	10
156. Best pair of Buff Cochin China, Shanghai, Canton, or Bramah Pootra Fowls	1	0
2d do	0	10
157. Best pair of Black do do	1	0
2d do	0	10
158, Best pair of white do do	1	0
2d do	0	10
159. Best pair of gray do do	1	0
2d do	0	10
160. Best pair of Black Spanish fowls	1	0
2d do	0	10
161. Best pair of Black Java fowls	1	0
2d do	0	10
162. Best pair of Bolton Grays	1	0
2d do	0	10
163. Best pair of Bolton Bay's	1	0
2d do	0	10
164. Best pair of Hamburgh Fowls	1	0
2d do	0	10
165 Best pair of Dominique	1	0
2d do	0	10
166. Best pair of feathered Bantams	0	10
2d do	0	5
167. Best pair of smooth Bantams	0	10
2d do	0	5
168. Best pair of Turkeys [White or Colored]	1	0
2d do	0	10
169. Best pair of Wild Turkeys	1	0
2p do	0	10
170. Best pair of large Geese	1	0
2d do	0	10
171. Best pair Bremen Geese	1	0
2d do	0	10
172. Best pair Chinese Geese	1	0
2d do	1	0
173. Best pair of Muscovy Ducks	1	0
2d do	0	10
174. Best pair common Ducks	1	0
2d do	0	10
175. Best pair of Aylesbury Ducks	1	0
2d do	0	10
176. Best pair of Poland Ducks	1	0
2d do	0	10
177 Best pair of Guinea Fowls	1	0
2d do	0	10
178. Best collection of Pigeons	1	0
1d do	0	10
179. Best lot of Poultry in one pen owned by the Exhibitor	2	0
180. Best collection of poultry entered in the various classes by one Exhibitor	2	
181. Other Entries		

AGRICULTURAL PRODUCTIONS.

CLASS XVIII—GRAINS, SEEDS, &c.

The Canada Company's Prize of	25 0
1. For the best 25 bushels of Fall Wheat the produce of Canada West, being the growth of the year 1855. The prize to be awarded to the actual grower only of the Wheat, which is to be given up to and become the property of this Association, for distribution to the County Societies for seed.	
2d do by the association	1 0
3d do	5 0
[The winners of the 2nd and 3rd prizes to retain their wheat].	
2. Best two bushels of Winter Wheat	2 10
2d do	1 15
3d do	1 5
3. Best 2 bushels Spring Wheat	2 10
2d do	1 15
3d do	1 5
4. Best 2 bushels of Barley [2 rowed]	1 10
2d do	1
3d do	0 10
5. Best 2 bushels Barley [6 rowed]	1 10
2d do	1 0
3d do	0 10
6. Best 2 bushels Rye	1 10
2d do	1 0
3d do	0 10
7. Best 2 bushels of Oats [white]	1 10
2d do	1 0
3d do	0 10
8. Best 2 bushels of Oats [black]	1 10
2d do	1 0
3d do	0 10
9. Best 2 bushels of Field Peas	1 10
2d do	1 0
3d do	0 10
10. Best 2 bushels of Marrowfat Peas	1 10
2d do	1 0
3d do	0 10
11. Best 2 Bushels Tares	1 10
2d do	1 0
3d do	0 10
12. Best Bushel of white field Beans	1 0
2d do	0 15
3d do	0 10
13. Best 2 bushels Indian Corn in the ear (white)	1 10
2d do	1 0
3d do	0 10
14. Best 2 do (yellow)	1 10
2d. do	1 0
3d do	0 10
15. Best bushel of Timothy Seed	2 0
2d do	1 10
3d do	1 0
16. Best Bushel of Clover Seed	2 0
2d do	1 10
3d do	1 0
17. Best Bushel Hemp Seed	1 10
2d do	1 0
3d do	0 10
18. Best bushel Flax Seed	1 10
2d do	1 0
3d do	0 10

Sect.	£	s.
19. Best bushel Mustard Seed	1	10
2d do	1	0
3d do	0	10
20. Best Swedish Turnip Seed, from transplanted bulbs, not less than 20 lbs.	1	10
2d do	1	0
3d do	0	10
21. Best 12 lbs Field Carrot seed	1	10
2d do	1	0
3d do	0	10
22. Best 12 lbs yellow Mangel Wurzel seed	1	10
2d do	1	0
3d do	0	10
23. Best bale of Hops, not less than 112 lbs.	5	0
2d do	3	0
3d do	2	0
24. Extra Entries		

CLASS XIX—ROOTS AND OTHER FIELD CROPS.

1. Best Bushel Pinkeye Potatoes	0	15
2d do	0	10
3d do	0	5
2. Best bushel of any other sort	0	15
2d do	0	10
3d do	0	5
3. Best bushel Swede Turnips	0	15
2d do	0	10
3d do	0	5
4. Best bushel of White Globe Turnips	0	15
2d do	0	10
3d do	0	5
5. Best bushel of Aberdeen Yellow Turnips	0	15
2d do	0	10
3d do	0	5
6. Best 20 roots Red Carrots	0	15
2d do	0	10
3d do	0	5
7. Best 20 roots White or Belgian Carrots	0	15
2d do	0	10
3d do	0	5
8. Best 12 roots Mangel Wurzel (Long-red)	0	15
2d do	0	10
3d do	0	5
9. Best 12 roots Yellow Globe Mangel Wurzel	0	15
2d do	0	10
3d do	0	5
10. Best 12 roots Long Yellow Mangel Wurzel	0	15
2d do	0	10
3d do	0	5
11. Best 12 roots of Khol Rabi	0	10
2d do	0	5
12. Best 12 roots of Sugar Beet	0	15
2d do	0	10
3d do	0	5
13. Best 20 roots of Parsnips	0	15
2d do	0	10
3d do	0	5
14. Best 20 roots of Chicory	0	10
2d do	7s	6
3d do	0	5
15. Best 2 large Squashes for Cattle	0	15
2d do	0	10
3d do	0	5
ast 2 Mammoth field Pumpkins	0	15
2d do	0	10
3d do		5
est 4 common Yellow field Pumpkins	0	15
2d do	0	10
3d do	0	5
18. Best 20 lbs. of Tobacco leaf, growth of Canada West	1	0
2d do	0	10

Sect.	£	s.
19. Best Broom Corn Brush 28 lbs.	1	0
2d do	0	15
3d do	0	10
The Canada Company's Prize for Flax.		
20. Best 112 lbs. of Flax	6	0
2d do by the Association	4	0
3d do	2	0
The Canada Company's Prize for Hemp		
21. Best 112 lbs. of Hemp	4	0
2d do by the Association	3	0
3d do	1	10
22. Other Entries.		

(The roots in the above class to be certified as of field culture by the secretary of the Township society of the Township where they are grown.)

HORTICULTURAL PRODUCTS.

CLASS XX.—FRUIT.

Sect.	£	s	d
1. Best 20 varieties of Apples, named [six of each]	0	15	0
2d do		10	0
3d do		5	0
2. Best 12 Table Apples, named [Fall sort]		10	0
2d do		7	6
3d do		5	6
3. Best 12 Table Apples named [Winter sort]		10	0
2d do		7	6
3d do		5	0
4. Best 12 Baking Apples, named		10	0
2d do		7	6
3d do		5	0
5. Best 20 varieties of Pears, named [3 of each]		15	0
2d do		10	0
3d do		5	0
6. Best 12 Table Pears, named [Fall sort]		10	0
2d do		7	6
3d do		5	0
7. Best 12 Table Pears, named [Winter sort]		10	0
2d do		7	6
3d do		5	0
8. Best dozen Plums [Dessert] named		10	0
2d do		7	6
3d do		5	0
9. Best 12 baking Plums, named		10	0
2d do		7	6
3d do		5	0
10. Best quart of Damsons [English]		10	0
2d do		7	6
3d do		5	0
11. Best 12 Peaches, grown in hot house,		10	0
2d do		7	6
3d do		5	0
12. Best 12 Peaches, grown in open air, named,		10	0
2d do		7	6
3d do		5	0
13. Best 20 varieties of Peaches, grown in open air [3 of each]		15	0
2d do		10	0
3d do		5	0
14. Best 12 Quinces		10	0
2 do		7	6
3d do		5	0
15. Best 4 clusters of Grapes [hot house]		10	0
2d do		7	6
3d do		5	0
16. Best 4 clusters Black Hamburgh [hot house]		10	0
2d do		7	6
3d do		5	0

Sect.	£	s.	d.
17. Best 4 clusters Black Grapes, grown in open air	0	10	0
2d do		7	0
3d do		5	6
18. Best 4 clusters white Grapes grown in open air		10	0
2d do		7	6
3d do		5	0
19. Best 4 clusters Grapes, of any other sorts		10	0
2d do		7	6
3d do		5	0
20. Best and heaviest 2 bunches of Grapes		10	0
2d do		7	6
3d do		5	0
21. Best collection of Grapes, grown in open air	15	0	
2d do		10	0
3d do		5	0
22. Best Water Melon		10	0
2d do		7	6
3d do		5	0
23. Best Musk Melon of any sort		10	0
2d do		7	6
3d do		5	0
24. Best 12 Tomatos		10	0
2d do		7	6
3d do		5	0
25. Best assorted collection of Tomatos		15	0
2d do		10	0
3d do		5	0
26. Extra Entries			

CLASS XXI.—GARDEN VEGETABLES.

1. Best 12 roots of Salsify		10	0
2d do		7	6
3d da		5	0
2 Best 4 heads Brocoli		10	0
2d do		7	6
3d do		5	0
3. Best 4 heads Cauliflower		10	0
2d do		7	6
3d do		5	0
4. Best 4 heads Cabbage (Summer)		10	0
2d do		7	6
3d do		5	0
5. Best 4 heads Cabbage (Winter)		10	0
2d do		7	6
3d do		5	0
6. Best 4 sorts Winter Cabbage, including Savoys		15	0
2d do		10	0
3d do		5	0
7. Best 12 Carrots for Table		10	0
2d do		7	6
3d do		5	0
8. Best 12 early Horn Carrots		10	0
2d do		7	6
3d do		5	0
9. Best 12 roots of White Celery		10	0
2d do		7	6
3d do		5	0
10. Best 12 roots of Red Celery		10	0
2d do		7	6
3d do		5	0
11. Best dozen Capsicums		10	0
2d do		7	6
3d do		5	0
12. Best collection Capsicums		10	0
2d do		7	6
3d do		5	0
13 Best 6 Egg Plants, purple		10	0
2d do		7	6
3d do		5	0

Sect.	£	s.	d.
14. Best 12 Blood Beets	0	10	0
2d do		7	6
3d do		5	0
15 Best Peck of White Onions		10	0
2d do		7	6
3d do		5	0
16 Best Peck of Yellow Onions		10	0
2d do		7	6
3d do		5	0
17 Best Peck of Red Onions		10	0
2d do		7	6
3d do		5	0
18 Best 12 White Turnips, Table		10	0
2d do		7	6
3d do		5	0
19 Best Peck of Early Potatoes for seed		10	0
2d do		7	6
3d do		5	0
20 Best and greatest variety of Early Potatoes		15	0
2d do		10	0
3d do		5	0
21 Best 4 Squashes, Table		10	0
2d do		7	6
3d do		5	0
22 Best and greatest variety of Vegetables		10	0
2d do		7	6
3d do		5	0
23 Extra Entries			

CLASS XXII—PLANTS AND FLOWERS.

1 Best dozen Dahlias, named		10	0
2d do		7	6
3d do		5	0
2 Best and largest collection of Dahlias	1	0	0
2d do		10	0
3d do		7	6
3 Best Boquet of Cut Flowers		10	0
2d do		7	6
3d do		5	0
4 Best Boquet for Table		10	0
2d do		7	6
3d do		5	0
5 Best collection of Green House Plants, not less than twelve Specimens	1	0	0
2d do		15	0
3d do		10	0
6 Best and greatest variety of Green House Plants	1	0	0
2d do		10	0
3d do		7	6
7 Best collection of Annuals in bloom		10	0
2d do		7	6
3d do		5	0
8 Best 6 Coxcombs		10	0
2d do		7	6
3d do		5	0
9 Best 6 Balsams in bloom		10	0
2d do		7	6
3d do		5	0
10 Best collection of China Asters		10	0
2d do		7	6
3d do		5	0
11 Best collection of Ten weeks Stocks		10	0
2d do		7	6
3d do		5	0
12 Best Floral Ornament or Design	1	0	0
2d do		15	0
3d do		10	0
13 Best collection of Verbenas, not less than 12 varieties		15	0
2d do		10	0
3d do		5	0

Sect.	£	s.	d.
14 Best collection of Native Plants, dried and named	1	10	0
2d do	1	0	0
3d do		10	0
15 Extra Entries			

CLASS XXIII.—DAIRY PRODUCTS, SUGAR, PROVISIONS &C.

1 Best Firkin of Butter, not less than 56 lbs.	£2	10	
2d do	1	10	
3d do	1	0	
2. Best Cheese, not less than 30 lbs.	2	10	
2d do	1	10	
3d do	1	0	
3. Best 2 Stilton Cheese not less than 14 lbs each	2	10	
2d do	1	10	
3d do	1	0	
4. Best Butter, not less than 20 lbs., in Firkins, Crocks, or Tubs	1	10	
2d do	1	0	
3d do	0	10	
5. Best 30 lbs. Maple Sugar	1	0	
2d do	0	10	
3d do	0	5	
6. Best 30 lbs. Beet Root Sugar	1	0	
2d do	0	10	
3d do	0	5	
7. Best 20 lbs. Corn Stalk Sugar	0	10	
2d do	0	10	
3d do	0	5	
8. Best Sugar made by Indians	0	15	
2d do	0	10	
3d do	0	5	
9. Best Starch	0	15	
2d do	0	10	
10. Best Soaps (collection assorted)	0	15	
2d do	0	10	
11. Best Candles (collection)	0	15	
2d do	0	10	
12. Best collection of Bottled Fruits	0	15	
2d do	0	10	
3d do	0	5	
13. Best 6 kinds of Preserves	0	15	
2d do	0	10	
3d do	0	5	
14. Best collection of Confectionery	1	10	
2d do	1	0	
3d do	0	10	
15. Best 20 lbs. Chickory, manufactured from roots grown in the Province this Season	1	0	
2d do	0	10	
16. Best barrel of flour	1	10	
2d do	1	0	
17. Best 14 lbs manufactured tobacco of Canadian growth	0	15	
2d do	0	10	
3d do	0	5	
18. Best specimen glue, not less than 14 lbs	1	0	
2d do	0	15	
3d do	0	10	
19. Rest two cured hams	0	15	
2d do	0	10	
3d do	0	5	
20. Best two sides of Bacon	0	15	
2d do	0	10	
3d do	0	5	
[Mode of Curing to be stated]			
21. Best Box of Soap, 28 lbs.	0	15	
2d do	0	10	
3d do	0	5	

Sect.	£	s.
22. Best collection of pickles	0	15
2d do	0	10
3d do	0	5
23. Best Honey, in the Comb not less than 10 lbs	0	15
2d do	0	10
3d do	0	5
24. Best jar of clear honey	1	0
2d do	0	10
3d do	0	5
25. Extra Entries		

DOMESTIC MANUFACTURES.

CLASS XXIV.—AGRICULTURAL IMPLEMENTS.

1. Best wooden Plough	2	10
2d do	1	10
3d	1	0
2. Best Iron Plough	2	10
2d do	1	10
3d do	1	0
[The ploughs to be tested in a field, by a Committee appointed for the purpose, at the Exhibition; ease of draught, and efficiency of work to be considered.]		
3. Best Subsoil Plough	2	10
2d do	1	10
3d do	1	0
4. Best pair of Harrows	1	10
2d do	1	0
3d do	0	10
5. Best Fanning Mill	1	10
2d	1	0
3d do	0	10
6. Best horse-power Thrasher and Separator	5	0
2d do	3	0
3d do	2	0
7. Best Grain Drill	3	0
2d do	2	0
3d do	1	0
8. Best Seed Drill or Barrow	1	0
2d do	0	15
3d do	0	10
9. Best Straw Cutter	1	0
2d do	0	15
3d do	0	10
10. Best Smut Machine	1	10
2d do	0	15
11. Best Portable Grist Mill	3	0
2d do	2	0
3d do	1	0
12. Best Grain Cracker	2	0
2d do	1	10
3d do	1	0
13. Best Corn and Cob Crusher	1	0
2d do	0	15
3d do	0	10
14. Best Machine for cutting Roots for Stock	1	10
2d do	1	0
3d do	0	10
15. Best Clover Cutting Machine	2	0
2d do	1	5
3d do	0	10
16. Best Clover Cleaning Machine	3	0
2d do	2	0
3d do	1	0
17. Best cider Mill and Press	3	0
2d do	2	0
18. Best Cheese Press	2	0
2d do	1	10
19. Best two-horse Waggon	3	0
2d do	2	0
3d do	1	0

Sect.	£	s.
20. Best one horse light market Waggon	2	10
2d do	2	0
3d do	1	0
21. Best Horse Cart	1	10
2d do	1	0
3d do	0	10
22. Best Farm Sleigh	2	0
2d do	1	0
3d do	0	10
23. Best Horse Rake	1	0
2d do	0	15
3d ko	0	10
24. Best Metal Roller	2	15
2d do	2	0
25. Best Wooden Roller	2	10
2d do	1	5
26. Best Reaping Machine	5	0
2d do	3	0
3d do	2	0
27. Best Stump Extractor	2	0
2d do	1	0
3d do		10
28. Best Mowing Machine	5	0
2d do	3	0
3d do	2	0
29. Best Potato Digger	0	15
2d do	0	10
3d do	0	5
30. Best Thistle Extracter	0	10
2d do	0	5
31. Best Farm Gate	0	15
2d do	0	10
3d do	0	5
32. Best Field or Two Horse Cultivator	3	0
2d do	2	0
3d do	1	0
33. Best Horse hoe, or Single Horse Cultivator	1	0
2d do	0	15
34. Best Post hole Borer	3	0
2d do	2	0
35. Best Wooden Pump	1	0
2d do	0	15
36. Best Machine for making Drain Tiles	2	10
2d do	1	10
37. Best Brick-making Machine	2	10
2d. do	1	10
38. Best half-dozen Hay Rakes	0	10
2d do	0	7
3d do	0	5
39 Best half-dozen Manure Forks	0	15
2d do	0	10
3d do	0	5
40. Best half-dozen Hay Forks	0	15
2d do	0	10
3d do	0	5
41. Best half-dozen Scythe Snaiths	0	15
2d do	0	10
3d do	0	5
42. Best Ox Yoke and Bows	0	10
2d do	0	5
43. Best Grain Cradle	0	10
2d do	0	5
44. Best half-dozen Grain Shovels, wood	0	15
2d do	0	10
3d do	0	5
45 Best half-dozen Iron Shovels	0	15
2d do	0	10
3d do	0	5
46. Best half-dozen Spades	0	15
2d do	0	10
3d do	0	5
47. Extra Entries		

CLASS XXV.—LEATHER AND FURS.

Sect.	£	s.
1. Best Saddle and Bridle	1	0
2d do	0	15
2. Best Side Saddle	1	0
2d do	0	15
3. Best specimen of Whips and Whip Thongs (Collection assorted)	1	10
2d do	0	15
4. Best 3 Hogskins	1	0
2d do	0	10
5. Best set of Farm Harness	1	10
2d do	1	0
3d do	0	1
6. Best set of pleasure Harness	1	1
2d do	1	0
3d do	0	10
7. Best Travelling Trunk	1	10
2d do	0	15
3d do	0	5
8. Best side of Sole Leather	0	15
2d do	0	10
3d do	0	5
9. Best side of Upper Leather	0	15
2d do	0	10
3d do	0	5
10. Best Kip skin	0	15
2d do	0	10
3d do	0	5
11. Rest Stirrup Leather	0	15
2d do	0	10
3d. do	0	5
12. Best skin Cordovan	0	15
2d. do.	0	10
3d do	0	5
13. Best specimen belt leather	0	15
2d do	0	10
3d do	0	5
14. Best specimens linings	0	15
2d do	0	10
3d do	0	5
15. Best Skirting Leather	0	15
2d do	0	10
3d do	0	5
16. Best side of Harness Leather	6	15
2d do	0	10
3d do	0	5
17. Best Calf Skin, Dressed	0	15
2d do	0	10
3d do	0	5
18. Best Skin of Leather for Carriage Covers	1	0
2d do	0	10
19. Best Fur Hat	0	15
2d do	0	10
3d do	0	5
20. Best Fur Cap	0	15
2d do	0	10
3d do	0	5
21. Best Fur Sleigh Robe	0	15
2d do	0	10
3d do	0	5
22. Best Specimen of Bootmaker's Work	0	15
2d do	0	10
3d do	0	5
23. Extra Entries		

CLASS. XXVI—MANUFACTURES IN METALS, &c.

1. Best Portable Steam Engine for farm purposes, 4 to 6 horse power [open to foreign competition] Diploma and	10	0
2. Best Model in metal of Engine, general millwright's work or machinery, Dip. and	2	0
2d do	1	0

Sect.	£	s.
3. Best specimen of Silversmith's work, Dip. and	2	0
4. " Do Ornamental Iron-work from the hammer, Dip. and	1	10
5. " Do Cast Ornamental Iron-work, Dip and	1	10
6. " Do Coppersmith's work, Dip, and	1	0
7. " Do Locksmith's work, Dip. and	1	0
8. " Do Pumpmaker's work, Dip. and	1	0
9. Best Iron Fire-proof Vault Door (price considered) Dip. and	2	0
10. Best Iron Fire-proof Safe (price considered) Dip. and	1	10
11 Best Refrigerator [price considered] Dip and	1	0
12. Best Hall Stove	1	0
2d do	0	10
3d do	0	5
13. Best Parlor Stove	1	0
2d do	0	10
3d do	0	5
14. Best Cooking Stove, with Furniture	1	10
2d do	1	0
3d do		10
15. Best Cooking Stove for Coal	1	10
2d do	1	0
3d do	0	10
16. Best system of ventilating buildings, with model and description, and reducing the same to practical use, Dip. and	5	0
2d do	2	10
17. Best speciman of Iron Casting for Stoves and general Machinery, Diploma.		
18. Best Balance Scales	1	0
2d do	0	15
3d do	0	5
19. Best Model Hot Air Apparatus	1	10
2d do	0	15
20. Best Steaming Apparatus for feeding Stock	1	10
2d do		15
21. Best set of Cooper's Tool	0	15
2d do	0	10
22. Best set of bench Planes	0	15
2d do	0	10
23. Best pair of Hames	0	10
2d do	0	5
24. Best Saddle tree	0	10
2d do	0	5
25. Best Weaver's Reeds	0	10
2d do	0	5
26. Best Augurs from ½ to 2 inches	0	10
2d do	0	5
27. Best Earth Augur	0	10
2d do	0	5
28. Best specimen 20 lbs. Cut Nails	0	10
2d do	0	5
29. Best Blacksmith's Bellows	1	5
2d do	0	15
30. Best Rifle	0	15
2d do	0	10
31. Best half-dozen Narrow Axes	0	15
2d do	0	10
3d do	0	5
32. Best set of Horse Shoes	0	15
2d do	0	10
5d do	0	5
33. Best half-dozen Grass Scythes	0	15
2d do	0	10
3d do	0	5
34. Best half-dozen Cradle Sythes	0	15
2d do	0	10
3d do	0	5
35. Best assortment of Edge Tools, Diploma &	5	0
36. Extra Entries.		

CLASS XXVII.—CABINET WARE, CARRIAGES, &c.

Sect.	£	s.
1. Best Side Board, Diploma and	3	0
2d do	2	0
3d do	1	0
2. Best Piano, Canadian Manufacture	5	0
2d do	3	0
3d do	2	0
3. Best Veneers from Canadian Wood, Dip. &	0	15
2d do		10
3d do	0	1
4. Best specimen of Sawed Pine	0	10
5. do Black Wallnut	0	10
6. do Oak	0	10
7. do Curled Maple	0	10
8. Best specimen of Graining Wood, Dip. &	1	10
2d do	1	0
3d do	0	10
9. Best Centre Table, Diploma and	1	0
2d do	0	15
3d do	0	10
10. Best Dining Table, Diploma and	1	0
2d do	0	15
3d do	0	10
11. Best Easy Arm Chair	0	15
2d do	0	10
3d do	0	5
12. Best Sofa, Diploma and	3	0
2d do	1	10
3d do	1	0
13. Best 6 Dining Room Chair	1	10
2d do	1	0
3d do	0	15
14. Best Ottoman	1	0
2d do	0	15
3d do	0	10
15. Best Work Box	0	10
2d do	0	5
16. Best Writing Desk	0	10
3d do	0	5
17. Best 1 Horse Pleasure Carriage, Diploma &	2	0
2d do	1	10
3d do	0	15
18. Best 2 Horse Pleasure Carriage, Diploma &	2	0
2d do	1	10
3d do	1	0
19. Best Two Horse Pleasure Sleigh	2	0
2d do	1	10
3d do	1	0
20. Best 1 Horse Sleigh	1	10
2d do	1	0
3d do	0	10
21. Best half-dozen Corn Brooms	0	10
2d do	0	5
22. Best half-dozen Broom Handles, turned,	0	10
2d do	0	5
23. Best Specimen of Willow Ware	0	10
2d do	0	5
24. Best dozen flour barrels	1	0
2d do	0	10
25. Best Wooden Pail	0	7
2d do	0	5
26. Best Wash Tub	0	7
2d do	0	5
27. Best Washing Machine	0	10
2d do	0	5
28. Best Board Rule	0	10
2d do	0	5
29. Best Spinning Wheel	0	10
2d do	0	5
30. Best dozen Wheel Heads	0	15
2d do	0	10
31. Best Churn	0	15
2d do	0	10

Sect.	£	s.
32. Best 4 or 6 Pannelled Door	0	15
2d do	0	10
3d do	0	5
33. Best Window Sash, 12 lights, hung in frame	0	15
2d do	0	10
34. Best Model Beehive	0	10
2d do	0	5
35. Best Bundle of Shingles, sawed,	0	10
2d do	0	5
36. Best do do split,	0	10
3d do	0	5
37. Extra Entries		

CLASS XXVIII.—POTTERY.

	£	s.
1. Best specimen of Pottery	£1	0
2d do	0	15
3d do	0	10
2. Best specimen Draining Tiles and pipes of different sizes	2	10
2d do	1	5
3d do	0	10
3. Best dozen Bricks	0	10
2d do	0	5
4. Best Water Filter	0	15
2d do	0	10
5. Best Assortment of Pottery	1	10
2d do	1	0
3d do		10
6. Extra Entries		

CLASS XXIX.—WOOLLEN AND FLAX GOODS.

	£	s.
1. Best piece of not less than 12 yards of Woollen Carpet	2	0
2d do	1	0
3d do	0	10
2. Best 12 yards, or over, Oil Cloth,	1	0
2d do	0	10
3d do	0	5
3. Best pair Woollen Blankets	2	0
2d do	1	0
3d do	0	10
4. Best Counterpane,	1	0
2d do	0	15
3d do	0	10
5. Best piece 12 yards Flannel,	1	0
2d do	0	15
3d do	0	10
6. Best piece of Satinet, 12 yards	1	0
2d do	0	15
3d do	0	10
7. Best piece Broad Cloth, from Canadian wool	2	0
2d do	1	0
3d do	0	10
8. Best piece Flannel, 10 yards, not Factory made,	0	15
2d do	0	10
3d do	0	5
9. Best piece Winter Tweed, 12 yards,	1	0
2d do	0	15
3d do	0	10
10. Best piece Fulled Cloth, 10 yards, not factory made,	1	10
2d do	1	0
3d do	0	10
11. Best Shawls, not factory made,	1	10
2d do	1	0
3d do	0	10
12. Best piece Linen Goods	0	15
2d do	0	10
3d do	0	5

Sect.	£	s.
13. Best samples of Flax or Hemp Cordage, not less than 28lbs.	0	15
2d do	0	10
3d do	0	5
14. Best 12 Linen Bags, manufactured from Flax, growth of Canada,	1	0
2d do	0	15
3d do	0	10
15. Best half dozen pairs knitted factory woollen drawers	1	0
2d do	0	15
3d do	0	10
16. Best half dozen knitted factory woollen shirts	1	0
2d do	0	15
3d do	0	10
17. Extra Entries		

CLASS XXX.—LADIES' DEPARTMENT.

Sect.	£	s.	d.
1. Best specimen of Crochet Work	1	0	0
2d do		15	0
3d do		10	0
2. Best specimen of Guipure Work	1	0	0
2d do		15	0
3d do		10	0
3. Best specimen of Lace Work	1	0	0
2d do		15	0
3d do		10	0
4. Best specimen of Fancy Knitting		15	0
2d do		10	0
3d do		7	6
5. Best specimen of Fancy Netting		15	0
2d do		10	0
3d do		7	6
6. Best Embroidery, in Muslin,		15	0
2d do		10	0
3d do		7	6
7. Best Embroidery, in Silk,		15	0
2d do		10	0
3d do		7	0
8. Best Embroidery, in Worsted,		15	0
2d do		10	0
3d do		7	6
9. Best specimen of Worsted Work		15	0
2d do		10	0
3d do		7	6
10. Best specimen of Raised Worsted Work		15	0
2d do		10	0
3d do		7	6
11. Best specimen of Ornamental Needle Work		15	0
2d do		10	0
3d do		7	6
12. Best specimen of Quilts, in Crochet,	1	0	0
2d do		15	0
3d do		10	0
13. Ditto in Knitting	1	0	0
2d do		15	0
3d do		10	0
14. Ditto in Silk	1	0	0
2d do		15	0
3d do		10	0
15. Best Piece-Work Quilt	1	0	0
2d do		15	0
3d do		10	0
16. Best specimen in Tatting		15	0
2d do		10	0
3d do		7	6
17. Best specimen of Braiding		15	0
2d do		10	0
3d do		7	6

Sect.	£	s.
18. Best specimen of Wax Fruit	15	0
2d do	10	0
3d do	5	0
19. Best specimen of Wax Flowers	15	0
2d do	10	0
3d do	5	0
20. Bast Pair Woollen Socks	10	0
2d do	7	6
3d do	5	0
21. Best Pair Woollen Stockings	10	0
2d do	7	6
3d do	5	0
22. Best specimen of Gentleman's shirts,	15	0
2d do	10	0
3d do	5	0
23. Best pair of Woollen Mittens	10	0
2d do	7	6
3d do	5	0
24. Best Pair of Woollen Gloves	10	0
2d do	7	0
3d do	5	0
25. Best Hat of Canadian Straw,	10	0
2d do	7	6
3d do	5	0
26. Best Bonnet of Canadian Straw	10	0
2d do	7	6
3d do	5	0
27. Other Articles.		

CLASS XXXI.—FINE ARTS, &c.

Oil.

	Professional List.	*Amateur List.*
1. Historical painting, Canadian subject, Diploma and	£3 0	£2 10
2d best	2 0	2 0
2. Landscape, Canadian subject, Diploma and	3 0	2 10
2d best	2 0	1 10
3. Animals [grouped or single] Diploma and	3 0	2 10
2d best	2 0	1 10
4. Portrait—Diploma and	2 10	2 0
2d best	1 10	1 0
In Water Colors.		
5. Landscape, Canadian subject, Diploma and	2 0	2 0
2d best	1 10	1 0
6. Portrait, diploma and	2 0	1 10
2d best	1 0	1 0
7. Animals, [grouped or single] Diploma and	2 10	2 0
2d best	1 10	1 0
8. Miniature, Diploma and	2 0	1 10
2d best	1 10	1 0
9. Flowers, Diploma and	1 10	1 0
2d best	1 0	0 15
Pencil and Crayon.		
10. Pencil Portrait, Diploma and	1 10	1 0
2d best	1 0	0 15
11. Crayon Portrait, Diploma and	1 10	1 0
2d best	1 0	0 15
12. Pencil Drawing, Diploma and	1 10	1 0
2d best	1 0	0 15
13. Crayon Drawing, Diploma and	1 10	1 0
2d best	1 0	0 15
14. Colored Crayon, Diploma and	1 10	1 0
2d best	1 0	0 15
15. Best specimen of Colored Geometrical drawing of Engine or Millwright work. Diploma and	2 0	

Sect.	£
16. Best specimen Architectural Drawing	1 10
2d best	1
17. Daguerreotype, best collection, the Exhibitor to have operated in Canada for the last 12 months, Diploma and	1 10
2d best	1 0
18. Lithographic Drawing, Diploma and	1 10
2d best	1 0
19. Wood Engraving, Diploma and	1 10
2d best	1 0
20. Engraving on Copper, Diploma and	1 10
2d best	1 0
21. Engraving on Steel, Diploma and	1 10
2d best	1 0
22. Best specimen of Seal Engraving, Diploma and	2 0
23. Do do Carving in Wood, Diploma and	2 0
24. Do do do Stone, Diploma and	2 0
25. Do Modelling in Plaster, Diploma and	2 0
26. Do do Ornamental Turning, Diploma and	1 0
27. Ornamental Penmanship Diploma and	1 0
2d best	0 10
28. Stuffed Birds	1
2d best	0 1
29. Picture Frame, gilt	1 0
2d do	0 10
30. Picture Frame, veneered	1 0
2d do	0 10
31. Stucco Moulding	1 0
2d do	0 10
32. Stained Glass	1
2d do	0 1
33. Dentistry, Diploma and	1 0
2d do	0 10
34. Extra Entries	

CLASS XXXII—INDIAN PRIZES.

1. Best Bark Canoe	1 10
2d do	0 10
2, Best 4 Paddles	0 15
2d do	0 5
3. Best Indian Cradle	0 15
2d do	0 10
4. Best pair of Snow Shoes [common size]	0 15
2d do	0 10
5. Best pair of Snow Shoes [8 inches long]	0 10
2d do	0 5
6 Best Tobacco Pouch, worked with Porcupine Quills	0 5
7. Best pipe of Peace	0 15
2d do	0 10
8. Best pipe of War	0 15
2d do	0 10
9. Best pair of Mocassins [plain]	0 7
2d do	0 5
10. Best pair [Mocassins worked with Porcupine Quills]	0 7
2d do	0 5
11. Best pair Mocassins (worked with beads)	0 7
2d do	0 5
12. Best pair Buckskin Mittens	0 7
2d do	0 5
13. Best dressed Deer Skin	0 10
2d do	0 5
14. Best Fruit Basket	0 7
2d do	0 5
15. Best Clothes Basket	0 7
2d do	0 5

Sect.	£	s.
16. Best Hand Basket	0	7
2d do	0	5
17. Best 14 lbs Wild Rice	0	10
2d do	0	5
18. Extra Entries		

CLASS XXXIII.—BOOKBINDING, PAPER &C.

1. Best specimen Bookbinding	1	0
2d do	0	15
3d do	0	10
2. Best ream of Writing Paper	1	0
2d do	0	15
3d do	0	10
3. Best ream of Printing Paper	1	0
2d do	0	15
3d do	0	10
4. Best and cheapest ream wrapping paper made from any material	1	0
2d do	0	15
3d do	0	10
5. Best specimen Letter-Press Printing, executed since last Exhibition	2	10
2d do	1	10
3d do	1	0
6. Extra Entries		

CLASS XXXIV.—FOREIGN STOCK.

1. Best Durham Bull over 5 years, Diploma and	2	10
2d do	2	10
2. Best Durham Cow, Diploma and	1	10
2d do	1	10
3. Best Ayshire Bull, Diploma and	2	10
2d do	2	10
4 Best Ayshire Cow, Diploma and	1	10
2d do	1	10
5. Best Hereford Bull Diploma and	2	10
2d do	2	10
6 Best Hereford Cow Diploma and	1	10
2d do	1	10
7. Best Devon Bull, Diploma and	2	10
2d do	2	10
8. Best Devon Cow, Diploma and	1	10
2d do	1	10
9. Best Stallion for Agricultural purposes, Diploma and	3	0
2d do	3	0
10. Best Blood Stallion, Diploma and	3	0
2d do	3	0
11. Best Leicester Ram Diploma, and	1	10
2d do	1	10
12 Best 3 Leicester Ewes, Diploma and	1	10
2d do	1	10
13. Best Southdown Ram, Diploma and	1	10
2d do	1	10
14. Best 2 Southdown Ewes, Diploma and	1	10
2d do	1	0
15. Best Merino and Saxon Ram, Diploma and	1	10
2d do	1	0
16. Best 2 Merino or Saxon Ewes, Diploma and	1	10
2d do	1	0
17. Best Boar, Diploma and	1	10
2d do	1	0
18. Best Breeding Sow, Diploma and	1	10
2d do	1	0
19. Extra Entries in Foreign Stock		

CLASS XXXV.—FOREIGN AGRICULTURAL IMPLEMENTS.

Sect.	£	s.
1. " Best Plough, Diploma and	1	0
2. " Subsoil Plough Diploma and	1	0
3. " Pair Harrows	1	0
4. " Fanning Mill, Diploma and	1	0
5. " Horse Power Thrasher and Separator, Diploma and	2	10
6. " Seed Drill or Barrow, Diploma and	1	0
7. " Straw Cutter	1	0
8. " Smut Machine	1	0
9. " Portable Grist Mill, Diploma and	2	10
10. " Grain Cracker	1	10
11. " Machine for cutting Roots for Stock	1	0
12. " Corn and Cob Crusher	1	0
13. " Clover Machine, Diploma and	2	0
14. " Reaping Machine, diploma and	2	10
15. " Cultivator, Diploma and	1	5
16. " Assortment of Agricultural Implements & Edge Tools, Diploma and	5	0
17. Extra Entries.		

SHERIFF TREADWELL'S PREMIUMS.

The following letter of Mr. Treadwell, addressed to Chas. Hersy Esq. has been sent to us for publication, and it will no doubt interest many of our readers Mr. Treadwell's indefatigible zeal in promoting the staple interest of his native country, is deserving of high commendation, and should be appreciated by the agricultural and trading community.—

L'ORIGINAL, 14th April, 1855.

MY DEAR SIR,—My feeling a deep interest in the advancement of Agriculture in this part of the Province induced me while President of the Agricultural Association of Upper Canada last year to offer certain premiums to elicit from the Farmers of this County a short description of the manner in which their Farms were conducted. The reason for doing so at that time was to establish the claim of the Eastern Section of Canada West to have one of the Annual Exhibitions held at Bytown; and another reason was, to endeavour to obtain some alterations in the Agricultural Law as it stands at present. But the lateness of the season when my offers were made in a great measure defeated my object for the last year. Mr. Alfred Cass kindly furnished me with a statement of his mode of farming. The *Experts* awarded to him a premium of £5 for the best Farm in Longeuil, and to Chancy Johnson, Junr. Esqr. was awarded the premium of £1 5s for the best Garden in the same Township, James Wells, Esq., altho' not competing, wrote me an admirable letter, on the subject of his farming operations, but he modestly kept back a description of his splendid barns, stables, granary, stone walls, &c. I had an opportunity of bringing out Mr. Cass' letter through the press of London during the Exhibition there, but the other townships did not furnish the required information in time, and therefore I propose, awarding this season the same premiums that I offered last year; provided the reports are furnished me by the 1st September next, that the information may be rendered available to any one who may wish to write a report of the state of Agriculture in these United Counties for the Agricultural Association; for which a premium of twenty pounds is offered for such an Essay as shall deemed worthy of the first prize, if written by the Secretary of the Local Agricultural Society and of fifteen pounds if written by any other person.

I again propose to the Townships of East and West Hawksbury and Caledonia, each the sum of Five Pounds, for the best Farm, and One Pound Five

Shillings for the best Garden of any member of the Township Society in each of the said Townships, where such a Society is established; and where there is not, then to any member of the United Township or County Societies.

The conditions are, that the Farm shall contain one hundered acres of land, including the wood land reserved for fuel, and that it shall yield the most farm produce with the least paid labour,—these being intended as an encouragement to farmers and their sons.

The *Experts* of the County or Township Societie to be the Judges, and their reports to be sent into me on or before the 1st of September next; and I allow the Directors of the different Township Societies to divide the sum offered among more competitors if they think it more conducive to the interests of Agriculture, and that by this means a greater amount of information on this most important subject can be elicited.

The following rotation of Crops, being nearly the same as was stated last year, is recommended as the standard of judging; but nothing would please me more than to learn that some farmers had adopted a course which had been found preferable:—

1st. The ground should be well ploughed and prepared for the root crop, Indian Corn or Pease For light soil the Belgian Carrot and yellow globe Turnip are preferable; for heavy soil the mangel Wurtzel.

2nd. For the second crop sow Wheat or Barley.

3rd. Third crop, grass either for Meadow or Pasture. Timothy and Clover, with Gypsum, are decidedly preferable for consumption on the farm: the former is best for Hay for the Market.

4th. Fourth year continue the land in grass.

5th. Fifth the same.

6th. Sixth plough and sow oats on light sand, but in heavy soils it may be continued longer in hay.

7th. The implements of husbandry should form a prominent feature in the competition. A farm not possessing the Scotch plough is excluded. Farms raising stock of the most approved kinds of horses, cattle, sheep, swine and poultry should be most favourably considered by the *Experts*.

8th. Surface draining should be next considered This is, in fact, included under the proper preparation of the land, but it is necessary to draw the attention of the former particularly, as it is far too much neglected.—Subsoil draining is beginning to agitate the human mind in the western part of the Province, as well as the introduction of draining tiles; and when they have been fully tested, I hope that they may be introduced by the farmers.

9th. Fences. Wherever the land is strong, stone walls should be made, both for their durability and clearing the land. On other lands cedar rails, either round or split, laid upon blocks; and well capped and staked, should be duly considered by the *Expert*.

10. The farm yard, out buildings, and farmer's house, should be carefully examined.—The farm yard should be well provided with water, as well as all the pastures.

11th. Every farm should have a certain number of fruit trees, say not less than fifty, upon it. Their choiceness to be an object of consideration.

12th. The part of the farm reserved for fuel should not be exposed to be blown down by violent winds. Where it is convenient, the wood on the farms of several individuals should be left contiguous. It should be cleared of all lying wood and seeded to grass as early as possible, and would furnish excellent food for horses, and shade for cattle.

For the prizes on Gardens I adopt the rules laid down by the Rev. Andrew Bell in a letter published in the June number of the *Agriculturist* last year, viz: the one.

1st. Contains such kind of Vegetables, in such *quantity* in such *variety*, and of such *excellence* as would minister the most to the *support*, the comfort, the enjoyment, and the pleasure of a family all the year round,

2nd. Containis the best crops of their kind.

3rd. Shows the greatest freedom from weeds, and the greatest neatness and care.

4th. Displays the greatest amount of good taste in laying out and ornamenting with flowers.

The perfection of the plan and operation of our County Societies is a matter of the utmost importance to the Farmers. The course adopted by the County Society of Hastings, and which has been so much indebted to Benjamin Davy, Esq., of Belleville is undoubtedly the best in Canada. Some of its points of excellence are these—that Gypsum, Clover and Seed Wheat are brought to Belleville and given to the Farmers free of any charge of profit; and also that the *Canadian Agriculturist* is furnished to each member of the Society free of charge. These are inducements to every Farmer to join in it, and by this judicious arrangement he received many times the value of his subscription, irrespective of the premium awarded at the County Show. I feel confident that Mr. Davy has done more for the production of good wheat than any person in Canada, the Commissioners of the Canada Company excepted.

I feel anxious that on revising the Agricultural Law, that twenty-five pounds should be given annually to each County Society for premiums on the best Farms and Gardens, and the same amount of Horticultural premiums, and a small amount for choice Seeds, to be selected by the Agricultural Board and sent to each County and Township Society; and that it should be rendered incumbent on every Society to order from its funds a copy of the *Agriculturist*, published at Toronto, for each member.

The subject of sub-soil Draining, particularly on clay soils, which form a large proportion of this section, should be brought immediately before the public; and I think that when all our low grounds are intersected in every direction, and at proper distances, with subsoil drains, that we shall find no difficulty in growing Fall Wheat, and by sowing it immediately after a crop of early peas, we might grow a crop each year instead of only one crop of wheat in two years, and allowing the ground to produce nothing the alternate year.

I feel anxious that some of our farmers should sow some of their newground with hay seed, to produce seed, as the heads will be larger and the seed cleaner; and at present prices the farmer can grow nothing more remunerative; and salting the stalk after it is threshed, there will be but little loss of fodder.

Every person would derive great benefit from making a correct diagram of his farm, laying down every field, and noting the quality of the soil, and thereby regulating his rotation of the crops. The

creeks, springs and wells, should be put down in their proper places; and the house, out-buildings, and Garden, should be placed upon it. I would recommend also that a correct account be kept with the farm.

With these remarks I beg to close a letter already too long.

I am, my dear sir,
Your most obedt. servt.
CHAS. P. TREADWELL

Chas. Hersey, Esqr.
Pres't Co. Prescott Agl. Society,
West Hawkesbury.

CULTIVATION OF THE POTATO.

Althouth the " potatoe rot" proved less destructive the last two years, than for some years previously, yet it has by no means disappeared, nor can we expect with any confidence that it will not recur. The conclusion to which we have come, being in our opinion the most philosophical, as well as most consistent with the established facts of this mysterious visitation, is this : the potatoe has been weakened in constitution by an unnatural system of cultivation, and thus rendered susceptible to disease, which in the case of the rot, was induced by a peculiar condition of the atmosphere, electrical or otherwise. If this be the true theory it is obvious that a more rational system of cultivation must be resorted to, in order to restore the plant to a normal and healthy state. And whether this theory be true or not, an improved and more rational treatment of the plant must prove highly beneficial.

In a late number of the *Country Gentleman* an excellent paper issued from the office of the Albany *Cultivator* by that veteran of the agricultural press, Luther Tucker Esq., we find some remarks on the cultivation of the Potatoe by a Mr. L. C. Roberts, who appears to understand the subject practically as well as theoretically. We subjoin the article for the benefit of those who may wish to *improve* their potatoes. His theory is, that in order to raise healthy potatoes the seed root must be healthy. If we follow the laws of nature, we should let our potatoes remain in the ground during the entire year, instead of storing them in our cellars for five or six months. It is strongly contended that the disease commences with the old tuber—that it undergoes a process of fermentation, and as a necessary consequence, the stalks will throw off a very noxious and unwholesome gas. The cause of this disease seems to be a transgression of a natural law. Nature designed the earth as the place for roots, and man has made a great mistake in not allowing them to remain there but about half the year. Potatoes deteriorate rapidly in quality by keeping them out of the ground; and by adopting this course of culture for years, the root loses some of its component and vital parts, so that, in the course of time, it has become enfeebled and lost its native vigor.

Mr. Roberts gives the following directions :

" Get seed roots, select one fourth acre arable land, [on which water will not stand] on an eastern slope, new land is the best for this use, fit early in the spring; furrow four or five inches deep, and two feet apart. Select seed roots that are about the size of a hen's egg, that have touched the ground during the previous winter. Do not cut them ; drop one every six or eight inches apart, in the furrows ; cover them by filling the furrows, and then put a top dressing of two inches of straw, or forest leaves on each row. when the tops are two inches high, pass between the rows with a shovel plow ; follow with a hoe destroying the weeds, and leveling the ground ; but do not hill. You have nothing more to do until fall, when the ground begins to freeze, then cover with half rotten straw, chaff or forest leaves, three or four inches deep. Your potatoes will now have a chance to ripen and rest during the winter.

I shall now direct you in planting for culinary use, next season. The spring following, before your potatoes sprout, you will plant another seed patch, as above directed. You will now take the residue, and plant a field crop for culinary use. Plant in drills, four or five inches deep, and three feet apart ; drop a potato every eight or ten inches, cover by filling the furrows ; cultivate or hoe twice. In this way you will get the greatest yield and best quality. Continue a similar practice from year to year, and from my own experience, I belive you will find your potatoes yearly increasing in yield and quality.

The third year you may increase your field crop, by plowing in fine manure. You have now had nature's course pointed out to you ; her own laws are truths ; and I humbly believe, I have given them a just exposition. All who follow my directions will the second year, see many seed balls, on the vines on their seed patch. These may be planted in the fall as I have done, and cultivated carefully, and good will undoubtedly result from it, if pursued in nature's own way. The potato will grow wild in our forests if planted in them, and thus save those the trouble, [who wish to get the wild root,] of resorting to their native forests in South America. Finally, we may apply nature's laws profitably to most other products Seed of every variety, should be fully matured, i. e. not harvested until fully ripe. That which approaches the nearest to perfection should be selected for seed, and all roots for seed purposes should remain in the ground, were they grew, until they bear seed; this will make the seed mature earlier, and make the most perfect of its kind."

ASHES, both dry and leached, are a good manure for dry and sandy loams—also, for dry peaty meadows. But they are not suitable for heavy and clayey loams because their mechanical operation is to render all soils more compact and more capable of retaining moisture.—*Mass. Ploughman.*

DRAINAGE.—At a meeting of agriculturists in France lately, the President is said to have illustrated the utility of drainage in this familiar manner:—" Take this flower pot," said he ; " what is the meaning of this small hole at the bottom? to renew the water. And why to renew the water? because it gives life or it gives death : life when it is made to pass through the bed of earth, for it leaves with the soil its productive principles and renders soluble the nutritive properties destined to nourish the plant ; death, on the other hand, when it remains in the pot, for it soon becomes putrid and rots, and also prevents new water from penetrating."

THE MONTHS—JUNE.

"For who would sing the flowers of June,
Though from grey morn to blazing noon,
From blazing noon to dewy eve,
The chaplet of his song to weave,
Would find his summer daylight fail,
And hear half told the pleasing tale."

The present month differs very materially in most of its characteristics from those of the last and its return is right welcome to all true lovers of nature, in which class should be included every individual following rural pursuits. Coleridge well describes the characteristic of this month, when he terms it "the *leafy* month of June." Most of the cultivated crops are now making rapid advancement, and the husbandman, having got over the labors and anxieties of seed time contemplates with hope and satisfaction, the progress which the fruits of his skill and exertions are daily making. The frosty nights of May, so often fatal to the early germs of vegetation, are now passed and the increasing power of solar light and heat gives to the vegetable kingdom an astonishing impetus, and establishes at once the reign of summer. Although in our climate there are occasionally some very hot days in June, yet upon the whole it must be regarded as, perhaps, the pleasantest month of the year. The flowers are more numerous, the leaves thicker, and the grass and foliage of a deeper green. Nature wears a calmer and more settled aspect; and at noon-time, on a June day, the birds sing but little, few sounds are heard in the woods and fields, save the humming of that busy little chemist, the Bee, which is distilling honey from the flowers. All that the old classic poets say of May, as descriptive of southern skies and climates, becomes applicable to us who inhabit these northerly regions, at the beginning of June.

Soft copious showers are extremely welcome towards the beginning of this month, as vegetation frequently suffers from continued drought.—Moisture combined with the daily increasing heat produces an astonishing growth of the cultivated crops.—The immortal poet of the seasons, has graphically described the effects of these genial showers; and we may remark further, that what is true of Britain, in regard to these phenomena, is even more strikingly so in reference to Canada;

"Gradual sinks the breeze
Into a perfect calm: that not a breath
Is heard to quiver through the closing wood,
Or rustling turn the many twinkling leaves,
Of aspen tall."

At last
The clouds consign their treasures to the fields;
And softly shaking on the dimpled pool
Prelusive drops, let all their moisture flow,
In large effusion, o'er the freshen'd world,
The stealing shower is scarce to patter heard,
By such as wander through the forest walks,
Beneath the umbrageous multitude of leaves,
But who can hold the shade while heaven descends,
In universal bounty, shedding herbs,
And fruits, and flowers, on Nature's ample lap?—"

One of the most interesting and popular species of rural labor,—sheep shearing,—commences as soon as the weather is sufficiently settled and warm that the sheep may, without danger, be deprived of the principal part of their clothing. There seems no settled opinion in Canada as to the precise time when the operation should be performed, but this much may be safely affirmed that the wool is better on the sheep's back until the weather sets in decidedly warm. To do otherwise, as is sometimes the case, is a decided act of cruelty, as well as false economy. In Greece, and some other southern countries, sheep were accustomed to be shorn early, but their comfort was so much consulted, that it was a frequent practice to provide the animals—particularly the weaker ones, with a sort of garment or covering made of cloth:—a practice we believe not wholly unknown in some of the more elevated districts of the northern portion of Britain at the present day.

Too little attention is generally paid to that most necessary preliminary,—the thorough washing of the animal previous to shearing. This operation when properly performed cleanses the fleece from various kinds of impunity and increases its marketable value. In the arid climate of our Australian Provinces, sheep have frequently to be shorn and the wool shipped for the British market, with a very imperfect washing, or indeed without any washing at all.—In the British Islands excellent accommodation is usually provided for this object, and the modus operandi, has been truthfully described by Dyer in the following lines:—

"On the bank
Of a clear river, gently drive the flock.
And plunge them one by one into the flood:
Plung'd in the flood, not long the struggler sinks,
With his white flakes, that glisten through the tide;
The sturdy rustic, in the middle wan,
Awaits to seize him rising; one arm bears
His lifted head above the limpid stream,
While the full clamy fleece the other laves
Around, laborious, with repeated toil;
And then resigns him to the sunny bank,
Where bleating loud, he shakes his dripping locks"

Sheep-Shearing among large flockmasters in the old County, is a process that is usually conducted with a considerable degree of ceremony and dignity, being a festival as well as a piece of labor. The Sheep Shearings of Holkham, in the County of Norfolk, the hospitable seat of Mr. Cooke, afterward Earl of Leicester, have had a world-renowned reputation. These annual gatherings of a large number of influential Agriculturists from all parts of the United Kingdom, were highly conducive not only to social conviviality, but also to rural improvement generally

—especially to that important department of the art the breeding and feeding of Sheep; an occupation for which England has been famous, and which is so closely connected with one of her most important and successful departments of material industry,—the woollen cloth manufacture.

Clearly as Dyer in the above quotation discribes Sheep-Washing, does our favorite Thomson depict Shearing:—

"At last of snowy white, the gathered flocks
Are in the wattled pen innum'rous press'd,
Head above head: and, ranged in hasty rows
The Shepherds sit, and Whet the sounding shears.
The housewife waits to roll her fleecy stores,
With all her gay-drest maids attending round:
One, chief, in gr'cious dignity enthron'd,
Shines o'er the rest, the past'ral queen, and rays
Her smiles, sweet beaming, on her Shepherd-King.
A simple scene! yet hence BRITANNIA sees
Her solid grandeur rise; hence she commands
Th' exalted stores of ev'ry brighter clime,
The treasures of the sun without his rage."

Before this sheet reaches the reader most of the root crops shou'd have been committed to the ground.—It is now about a Century ago that drill-husbandry,—as the cultivation of crops in rows is termed,—was introduced into the more advanced portions of the Mother Country, and the practice professionaly extended, till it has become all but universal in the best farmed districts.—In Canada the drill system may now be considered as established, and the practice is more or less advancing in all directions. Even grain-drills may be seen in operation in not a few places, while every thrifty farmer, whether he occupies little or much land, has a certain portion of it in turnips, carrots, mangel wurtzel, &c., p'anted in rows The advantage of row-culture consists not so much in the saving thereby effected in the amount of seed required, nor even the greater regularity in committing it to the ground, though both of them are of no small importance, but chiefly in the facilities afforded for keeping the land perfectly clear of all kinds of weeds, during the period of growth. It may be safely affirmed as an indisputable truth, that weeds are the greatest obstacle to the introduction of improved systems of culture in this or any other country. They rob alike the farmer, his soil, and his crops; and the drill-husbandry should be welcomed and practised by every improving Agriculturist as the most practicable and efficient method for effecting their eradication. The introduction of this system of tillage into Britain was speedily attended by the happiest results. Turnips as a field crop rapidly extended,—and other valuable esculents soon followed. A much larger amount of nutritious food was raised, thereby increasing the number of animals supported on the farm; while the amount of rich manure produced on the ground, was greatly augumented; and important improvments were effected, both in the breeding of domestic animals, and the implements of tillage.

In this month proper attention should be given to the summer fallow; by deep and perfect ploughing, and scarrifying, the growth of weeds may be prevented, and the soil so exposed to the beneficial action of the atmosphere, as to call into action its latent fertilising powers for nourishing the succeeding crop. The farmer cannot make too free a use of that useful implement the cultivator on his fallows, or the horse-hoe among his row crops. The drier the season the greater becomes the necessity of frequently and deeply stirring the soil around growing plants; thus increasing its capabilities of attracting and retaining moisture. As to the eradication of weeds thereby we cannot better conclude than with the quaint lines of old Tusser:

"In May get a weed-hook, a crotch and a glove,
And weed out such weeds as the corn does not love;
For weeding of winter corn now is the best,
But June is the better for weeding the rest.

The May-weed doth burn, and the thistle doth fret,
The fitches pull downwards both rye and the wheat
The brake and the cockle be noisome too much;
Yet like unto hoodle no weed there is such."

B.

SILESIAN SHEEP.—*Good Fleeces.*—At a shearing of a portion of the Silesian Sheep imported last August, by CHAMBERLAIN, CAMPBELL & LADD, which took place recently at the residence of the first named gentleman, in Red Hook, Dutchess Co., N. Y., the weight of several fleeces, as well as the carcasses from which they were shorn, were noted and are worthy of being chronicled. The average weight of eight unwashed fleeces, from ewes which had suckled lambs during the winter, was 8 lbs. 1 oz. The average weight of the carcasses of the same ewes was about 78 lbs. Considering the fineness of the wool, and its high market value, this is a wonderful result,—for it will be seen that, after deducting 33½ per cent. from the fleeces they will average 5 lbs- 6 oz. of clean, merchantable wool. The sheep shorn were not the best of the flock. A five year old buck, shorn at the same time, produced a fleece [of 13 months growth,] weighing 14 lbs. 12 oz.; weight of carcass, 125 lbs. Messrs. C. C. & L. say they will place the fleece of this ram, for dollars and cents, in proportion to carcass against any fleece of only 13 months growth shorn from any ram of any age in America.

OIL OF INDIAN CORN.—In the distilleries of the Western States, where corn brandy is made, the oil is extracted and sold as a product of the manufacture. A hundred bushels of the large Southern and Western corn, in which the horny part is not very large, yields fifteen or sixteen gallons of oil, which is at the rate of 2½ per cent. of the weight of the grain as it comes to market. Previous to distillation, the Indian corn is fermented with malt, and during the fermentation the oil rises to the surface and is skimmed off. It is a bright pale yellow, and agreeable smelling, and sells for about a dollar a gallon. It is used for burning in lamps in Western New York, in Ohio, in Michigan, and upon Lake Superior.—*Johnston's Notes on North America, Vol. I., p.* 153.

MONARCH.

Taken from life at twenty years old.

There are few persons who do not admire a fine horse. Though his flesh has little or no economic value in this country, and though railroads may ease him of part, and that the most exhausting of his labours, yet the horse will never be superseded; he will never cease to be the most constant, useful, and admired of all the brute companions of man.

Many excellent horses, thorough-breds especially, have been introduced into Canada, and their good qualities extensively diffused. The Race-Course seems to have fallen somewhat into disrepute, and we do not regret it. The qualities that shine there are not the most useful for ever day work; and if they were, it is not necessary to encourage and perpetuate the vices of the race-course, in order to secure and perpetuate a good breed of horses.

The best authorities seem to be of opinion that the thoroughbred, or as he is popularly known in England, the blood-horse stands highest in the scale of his race, and is the best to "breed up to."

The following extract, from an address delivered last year by Hon. J. Prescott Hall, an American gentleman of acknowledged authority in such matters, will be interesting as well as instructive to many of our readers:—

"The horse has been the animal most interesting to man from earliest history; and the country of his fame for speed, courage, stoutness and endurance has changed from time to time as men have sought him out and cultivated his good qualities.

"The East was the first region which possessed a breed fit for the purposes of battle; and we read that the wise King of Israel introduced chargers from Egypt into his forty thousand stalls of Syria, a thousand years before the Christian Era.

"But this war-like animal was known long before this period, for it is Job (and he lived at a time so remote that we have no correct notion of its date) who describes the war-horse "with his neck clothed

with thunder, pawing the valley and rejoicing in his strength. He mocketh at fear and is not affrighted; neither turneth he back from the sword; the quiver rattleth against him, the glittering spear and shield. He saith among the trumpets ha! ha! and he snuffeth the battle afar off; the thunder of the Captains and the shoutings.

"Homer describes the steeds of Æneas as of celestial origin, for he says they were given by Jove the Thunderer, to Tros as the price of his son Ganymede, who was taken up to Heaven for his beauty to be the cup-bearer of the Gods.

"Virgil speaks of a breed that had the east wind for an ancestor, so swift were they and so light of foot.

"He describes the animal most in esteem in his time and says:—

"'Lofty his neck, his head small and slender; short in the loin with a chest swelling with brawny muscles. His colour, bay or bluish grey; his mane thick and waving upon his right shoulder, his back seems braced with a double spine and his solid hoof resounds upon the plain; such were the brace of Mars and such the chariot-horses of great Achilles.'

"But without stopping to enquire whether the poetic coursers of Homer and Virgil were entitled to the high commendation bestowed upon them by those authors, one thing is certain, that the best horses now to be found in Europe and the United States have had their origin in the East and most probably in Mesopotamia.

"When the Crusaders went to the Holy Wars, they took with them the powerful but heavy horses of Normandy, Flanders and Hungary; and although these animals, with Knights upon their backs, full armed, were like "Elephants endorsed with towers of Archers," yet they melted away like dew before the heat of Asiatic sands and the thorough bred cavalry of Saladin.

> "In mail their horses clad, yet fleet and strong,
> Prancing—their riders bore.
> See them in their forms of battle ranged,
> How quick they wheel and flying, behind them shoot
> Sharp sleet of arrowy showers, against the face
> of their pursuers; and overcome by flight"

"This is a very exact description, drawn by him who equaled "blind Thamyris and blind Mæonides" not only in fate, but in the power and sweetness of his song; and hence King John, when he succeeded to the throne of Richard, the Crusader, introduced some of this blood into England, and encouraged its cultivation by establishing race courses, and offering prizes to be run for, by the Arab, the Barb, and their descendants.

"By these and the like means, from generation to generation, by the aid of the government, by private enterprise and emulous rivalry, the English had infused so much of the eastern blood into their horses that at the time of the American Revolution and from those days down to our own, they had the best breed in the world.

"They improved upon the Arab by giving him size, preserving at the same time all his admirable qualities of speed, stoutness and endurance; for it is a maxim upon the turf—"that a good big one always beats a good little one."

"John Blunt, an Arab in every particular, and as good a racer of his size as the world ever saw, not fifteen hands high, could not contend successfully with Fashion, because her superior height and length gave her a stride which told so upon the little horse, in a race of four miles, that he was compelled to yield the palm to that renowned and, in my opinion, matchless and unrivalled courser.

"To come down to practical results then, you may ask, would you have farmers to breed and use race-horses? Certainly *not* thoroughbreds; by which I mean animals whose pedigree can be traced directly to Arab originals; but I would have them never employ any that were not strongly imbued with the best properties of oriental steeds.

"We have bred in this country from the best originals; and our trotters, including the Morgans and Blackhawks, owe their speed and endurance entirely to their eastern blood. Old Messenger, one of the best racers that England ever lost, was introduced into this country shortly after the Revolution. He was the sire of Mambrino, a thoroughbred trotter, who could knock off a mile in three minutes in his twenty-first year when I saw him; and he transmitted his blood to the famous Lady Suffolk, who could go the same distance in two minutes and twenty-six seconds.

"He and she had the hardy grey colour of Old Messenger, who gave to *them* the speed and endurance of the trotter; while the same Patriarch imparted to Eclipse his swiftness as a racer.

"Trustee, who not long ago astonished all England by going over a course of twenty miles within the hour in harness, was a son of imported Trustee, a thoroughbred race-horse, whose price at one time was three thousand guineas."

The portrait at the head of this article is of a famous thorough-bred, now owned by Col. L. G. Morris, of Mount Fordham, who is also the owner of "Fashion" the "unrivalled courser," alluded to by Mr. Hall. She has won upwards of $60,000 on the course, and was seldom beaten. We hope to give a portrait of "Fashion" in a future number. Mr. Morris is no sportsman, and has no idea of appearing on the "turf" in any other character than that of a breeder. He has purchased these celebrated animals in order to rear a progeny possessing their qualities, which he deems the best for breeding purposes, especially for crossing with the common breeds. The following is a statement of

MONARCH'S PEDIGREE, CHARACTERISTICS AND PERFORMANCES.

Monarch was bred at the Hampton Court Stud by his Majesty William IV., in 1833. He was got by Priam out of Delphine by Whisker; Delphine was out of My Lady by Comus, and she out of The Colonel's dam by Depini; The Colonel's dam out of Tipple Cider by King Fergus, and she out of Sylvio by Young Marske out of Ferret by a brother of Sylvio—Regulus—Lord Morton's Arabian—Mixbury—Mulso Bay Turk—Bay Bolton—Coneyskins—Hutton's Grey Barb—Byerly Turk—Burtler. Nothing can be richer than this pedigree.

Monarch was imported by Colonel W. Hampton of Columbia, S. C., in the Autumn of 1836. In 1840 the Editor of the "Spirit of the Times" gave an elaborate description of this fine horse, from which the following is extracted:—"He is a rich, satin-coated blood bay, with black legs, mane and tail, and no other white than a star. He is a horse of great bone and substance, and stands fully sixteen hands under the standard. We never saw a horse that we preferred to him. He is remarkably fine tempered, ran on his courage, and had a fine idea of perpetual motion." For a portrait and an extended description of him, see "Turf Register," vol. xvi. p. 559–60.

Performances.—Monarch came out in the autumn of 1837, being then three years old, at Columbia, S.C, where on the 23rd Nov. he won the Jockey Club purse of $400, two-mile heats, in 3.55—3.58, beating Betsy Baxter, Gabriella, Short Robin, Lieber, and Ellen Percy, with the greatest ease imaginable. On the following Saturday, Nov. 25th, he galloped over the same course two mile heats, for the Hampton Plate.

1838.—At Augusta, Ga., Feb. 8th, he won the $600 purse, three mile heats, beating Sally Vandyke, in 6·25—6·26. The rain poured down incessantly all day, and Sally was unable to put him up to anything beyond an exercise gallop. We next find him at Columbia, S. C., on the 20th Nov., entered against Big John for the Jocky Club purse of $700, four mile heats. He did not go a yard at his speed, and won the first heat with so much ease, (in 8:07) that Big John was withdrawn. On the 13th Dec., following, at Augusta, Ga., he beat Gerow and Clodhopper for the purse of $1500, four mile heats under a hard pull, in 8:10—8;36.

1839.—Monarch's next victory was at Charleston, S. C., on the 30th Feb., where he won the four mile purse of $1000 as easily as his former races, in 8:7—8:55, beating Trident and Florida Hepburn. On the following Saturday, the 23rd, over the same course he galloped round for the Tattersall Whip, four miles, not having a competitor. Near the termination of the third mile, his owner directed Gil Patrick to "pull him steady and let him go," when, under a hard pull, he ran the fourth mile easily in 1:48, carrying 111lbs.

After this race, Colonel Hampton refused to take $20,000 for him. In the autumn of the year 1839 he met with an accident, by which he sprung the leader of his right fore leg, and was in consequence withdrawn from the turf. Monarch never lost a heat and was never put to his speed. When four years old he more than once beat imported Emily, giving her 27lbs in his trials. The following are among his distinguished get:—Castanet, Eliza Jane, Bellamira, Princess, Milwood, Captain Minor, Lithgow, Union, &c., &c., and also sire to the dam of Highlander (well known as a distinguished racer,) the dam of Die Clapperton, Young Boston, and many others of note. Monarch received the first premium at the New York State Fair in 1854, as the best thorough-bred stallion exhibited."

FEEDING CALVES.

A correspondent of the Boston *Cultivator* gives his experience in raising calves on *sour* milk. If it be true that calves can be made to "grow fast" on this regimen, it will be a considerable saving to many farmers. His statement is as follows:—

It has been a common practice among farmers to let their calves run with the cows, and when they wished to raise a nice pair, they would have them suck about three months. Some prefer teaching them to drink, which I think is a better way, if they wish to have them take the milk just as it comes from the cows; but, brother farmers, I have found out a better and cheaper way still. I had, last April, two Devon calves that I thought I would try a new way of raising; I therefore shut them up in a dark stable and fed them on sour milk altogether, and no other food at all. The way I managed, was to put my sour milk into a tin vessel and set it on the stove, stirring it until it was warm; it would then look as if it had not soured. I gave each of them about eight or nine quarts from twice to three times a day for five months, but after July, I gave them a little hay. They grew so fast under this treatment, that they were visited by a great number of people, many of them stating, that it was impossible to grow them so fast, unless I had thickened their millk with flour or fine meal, but finding that which I have stated to be a fact, they were astonished at the sight Brother-farmers, try it for yourselves.. M. P.

CONTRACTED FEET.

Dr. Dadd gives the following directions for this disease:—

"In all cases we must endeavour to give the frog a bearing upon the ground; and, in order to do this, the shoe ought to be removed. A dry, brittle and contracted hoof may be improved by repeated poulticing with soft-soap and rye-meal, applied cold. So soon as the hoof softens, let it be dressed, night and morning, with turpentine, linseed oil, and powdered charcoal, equal parts. Yet, after all, a run of grass in a soft pasture, the animal having nothing more than *tips* on his feet, is the best treatment. A very popular notion exists, that cow manure has a wonderful effect on a contracted hoof; but it is the candid opinion of the author, and no doubt the reader will coincide, that filth and dirt of every kind are unfavourable to healthy action. Such a remedy, aside from its objection on the score of decency, savors too much of by-gone days, when live eels were sent on errands down horses throats to unravel their intestines. If any benefit belongs to such an objectionable application. it is due to the property it posses of retaining moisture; therefore cold poultices and water are far superior. Clay and moist earth, placed in the stall for the horse to stand on, are far inferior to the stuffing of wet oakum, which can be removed at pleasure. In order to keep it in contact with the sole, we have only to insinuate two strips of wood between the sole and shoe; one running lengthwise, and the other one crosswise of the foot. It affords considerable pressure to the foot, is cooling and cleanly, and is greatly superior to the above articles."

Mildew stains are very difficult to remove from linen. The most effectual way is to rub soap on the spots, then chalk, and bleach the garment in the hot sun.

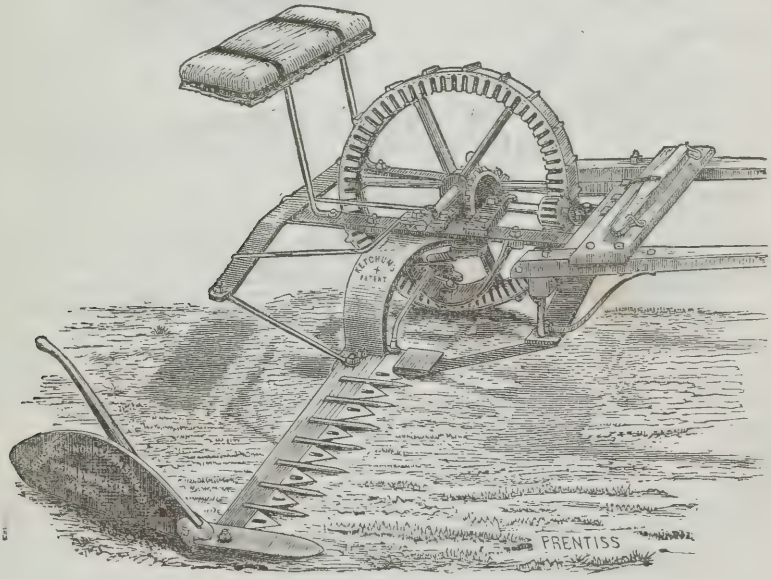
ETHER FOR ANIMALS.

Dr. Jackson, of Boston, the first discoverer of the value of ether in surgical operations, commends the use of a mixture of ether and chloroform in operations on domestic animals. This mixture may be conveniently inhaled by the animal, by wetting a sponge with it, and placing it on a basket or muzzle, to be attached to the head, in the same manner as teamsters often feed their horses with provender. The sponge should first be saturated with water, squeezed dry, and then the mixture, one part of chloroform, and four parts of ether, mixed in a bottle, may be poured upon the sponge as required, supplying it anew as it evaporates.

This mixture Dr. J. regards as a safer application than ether alone. He has never known a fatal accident from its use, where it was inhaled in connection with the atmospheric air. The latter is necessary in inspiration to sustain the functions of life. Animals which perspire freely will bear strong doses, while it should be given very cautiously to cats, dogs, &c. The Dr. commends its use in shoeing refractory horses.

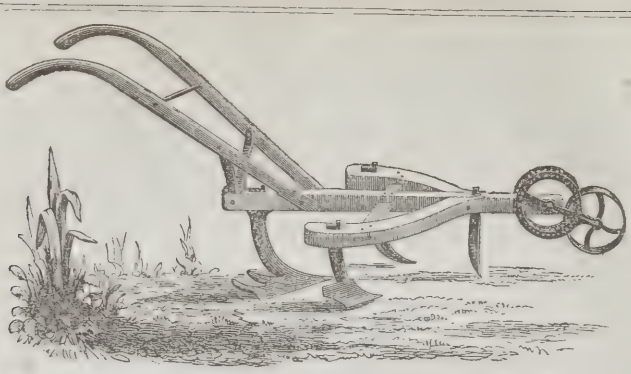
IMPROVED IMPLEMENTS.

The demand for improved implements in this vicinity, and, so far as we can learn, throughout Upper Canada, has more than doubled within the last year. We are glad to hear that our enterprizing neighbours, Messrs. McIntosh & Walton, have sold nearly all their stock of Spring implements, imported this year; and have sent orders by telegraph for larger supplies. The Lap-furrow Plough, of Ruggles, Nourse, Mason & Co., Boston, is much sought after. Those who have tried them, are throwing away their heavy Scotch Ploughs, for all purposes except sod-ploughing. We have used one of the Lap-furrows, No. 2, this Spring; and found it much easier upon the team, and more efficient in turning and pulverizing the soil, than the Canadian Scotch plough. The price ($14) is very reasonable, considering the excellent timber used, and the workman-like manner in which the plough is made.



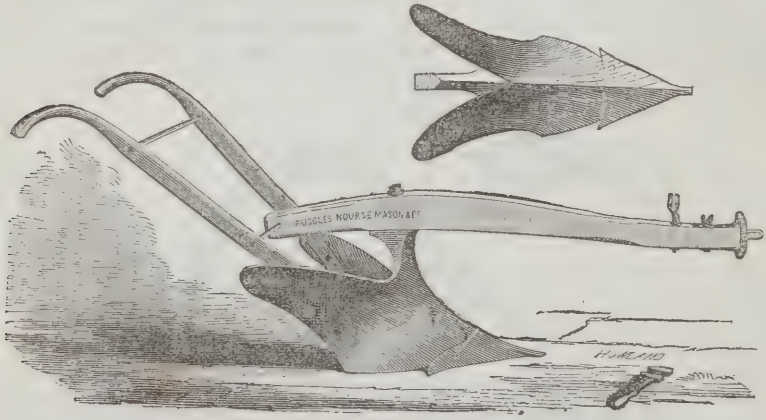
MOWING MACHINE.

The season of hay-making will be at hand in a few days; and as labour is exceedingly high in all parts of Canada, those whose land will permit the use of machinery, will find it to their advantage to obtain a good mowing machine. Some complaints are made against these machines, but only where they are badly made or unskillfully used. Purchase from a responsible maker and there will be little danger of failure. Ketchum's mowing machines, as made by several establishments in Canada, and the United States, are capable of mowing in the best style. Indeed we have never seen grass cut better or more evenly with the scythe. The cut represents a one-horse machine. We see no particular advantage in this arrangement. The two-horse mowers may be had of McIntosh & Walton. We understand that Massey & Co., of Newcastle, are now making very excellent combined reapers and mowers.



HORSE HOE.

This is a most useful implement, and should be found on every farm where root crops, corn &c., are grown. The cut represents the implement as improved by Ruggles & Co., Boston. The price ranges from $7 to $9.



DOUBLE MOULD BOARD PLOUGH.

This is an excellent plough for planting, cultivating, and digging potatoes. It may also be used for other hilled crops. Messrs. McIntosh & Walton have them with expanding mould boards at from $7 to $9.

POTATOES—FORTY VARIETIES.

Having turned our attention to the *practical* management of a farm, as well as that of a farmer's paper, we thought it might serve a useful purpose, and involve but small expense, to introduce and test several new varieties of the potatoe. The Rev. Chauncey E. Goodrich of Utica N. Y. has acquired much celebrity for his success in producing seedlings from varieties recently imported from South America, the native place of this esculent, and we accordingly applied to him for a selection of his best sorts. He very promptly forwarded thirty-six different varieties including the Rough Purple Chili,—a much admired potatoe, hardy, white-fleshed, and remarkably free from rot,—and a number of its seedlings. Several of these are seedlings of 1853 and 1854, and therefore not sufficiently tested to fix their quality. Others have been found to mature early, (in the climate of New York) to be good for the table, prolific, &c., and *all* the seedlings (of 1849,50 and 51) less affected by rot than the most hardy of the common kinds.

We have planted all these varieties in good soil, and shall give them the same treatment. We have also planted several English varieties of high repute for the purpose of comparison &c. Three, obtained from Mr. Fleming, are probably known to some of our readers. The "Goldfinders"—imported last year

and grown upon the Experimental farm,—are a fine looking potatoe and did well last season. The "York Regent" and the "Kentish Kidney" were imported this year.

We have no doubt that among the seedlings obtained from Mr. Goodrich, more than one will be found to do well in this climate, and prove an acquisition to the table. If so we shall feel satisfied and deem ourself abundantly rewarded for the trouble of introducing them into Canada

Horticulture.

CULTIVATION OF THE STRAWBERRY.

SITUATION.

A warm, exposed, and yet rather moist location is the best for a strawberry plantation.

If very early fruit be an object, select a side-hill gently sloping towards the south. with a liberal admixture of small stones or coarse gravel in the soil. This should then be protected on the north, west, and east by a high closed board fence, or a live hedge; we have seen an artifical hedge of withered evergreen boughs that answered an excellent purpose, and enabled the owner to realize fifty cents per quart for the crop, when otherwise he could not have so much anticipated the usual season, and would have been compelled to take twelve and a half cents for the same quantity.

If late fruit be desired, then select a piece of land facing the north, and exposed. Low land is usually preferable to high, hilly land for the strawberry, y e it can easily be raised on both; a little knowledge of its charact r will enable us to remedy the defects of the high ground. If the situation is near a spring of water, where it can be irrigated, and is also susceptble of drainage, it is very desirable

Though they will sometimes succeed when partially shaded with trees or shrubbery, yet they are best flavored in an open garden, with no shade but their leaves. Alpines, and some other kinds, planted in the northern shade of a fence or dwelling, will commence later and continue longer in their bearing season.

SELECTION OF SOIL.

New land, recently disrobed of its forests, if of a deep gravelly loam, we think is the best adapted to the strawberry, and next, a sandy loam; but almos any soil, even the heaviest clay, can be prepared, by a liberal admixture of sand and gravel, so as to produce the finest fruit.

As has been intimated, as low moist soil as can be procured, consistently with depth and thorough drainage, is best adapted to the strawberry; and yet elevated knolls, and even sand-hills, with the precautions above-named, have often succeeded well.

Wet, spongy lands, except with a porous subsoil susceptible of drainage; and high, barren hills, with a thin, flinty soil, are alike to be avoided.

The stawberry, however, is so retentive of life that it will live in almost any soil; but it will not produce much fruit, unless the remedies are in some way applied to the ungenial soils.

PREPARATION OF THE SOIL.

Clear the ground of weeds, roots, and seeds of all kinds in preparation for drainage, which in most soil should be attended to the first thing. The best drains are the earthen tile drains, from two to four rods apart, which should be so constructed as to be left open at both ends for the circulation of the air, as well as the release of stagnant water. A brush or coarse stone drain is beneficial as a temporary expedient.

After draining, break up the soil as deep as possible with a subsoil plough, or by trenching twenty inches or more deep. The strawberry is so sensitive to drought and stagnant water that very little of the best land in our country can be exempt from draining and trenching, if we would receive in return uniformly large crops of fruit in all seasons.

Inasmuch as the fruit is composed of potash. soda, and lime—sixty-two parts in every hundred, as will be seen by the tables in this work giving the analysis of the strawberry and plant—we recommend next that an application to the acre be made of twenty to thirty bushels of unleached or leached ashes, ten to twelve bushels of lime—either stone or oyster-shell—with two to three bushels of salt, which should be thoroughly mixed with the soil, if possible, some weeks before the plants are set out. A liberal handling of the soil, thoroughly pulverizing it, before proceeding to the work of transplanting, is good economy.

MANURES.

On this point we are aware we shall differ widely from some of our ablest horticulturists, to whom we confess our inferiority in most things in the great science of horticulture; yet, in this we are confident that their own personal experiments, did their time permit, would lead them to the same results that we have deliberately arrived at.

And first, we would not use animal or barn-yard manures for the strawberry. We have eschewed their use entirely for the last six years. If friends who have watched our beds for years, say the soil was peculiar, and is not a fair test, we answer, that may be, but we have arrived at this positive conclusion from our experiments and observation in other locations and soils, as well as in our own garden, and every step has only confirmed us in the opinion, that animal manures are too stimulating and exciting to the plant for the full bearing properties of the strawberry.

Fine fruit has been raised, we know, in fair quantities and of enormous size, in the use of animal manures, yet we think the quantity and quality would have been decidedly increased by the use of vegetable instead of animal manures. The latter causes the plant to run too much to vines, and start its runners before it has even perfected the earliest part of the first crop of fruit, besides filling the earth generally with seeds, and undecayed portions of the straws, and fibrous portions from the barn-yard, which come into injurious contact with the numerous fibrous roots of the plant in its progress in the earth, which should always be kept as pure for the strawberry as possible

Leaf-mould, decomposed turf or peat, well composted with new surface soil, or muck, ashes and lime, is a good manure for the strawberry. We wish it, however, distinctly understood, that few good soils need enriching at all for the strawberry; on the contrary, most of the soils [for instance, those in Western New York] would be more benefited by being depleted by an admixture of half river-sand.

It will be seen from the interesting articles in our Appendix A, from C. F. Peabody, Esq., near Columbus, Georgia, that his own observation and experience have led him to the same conclusions. Other

cultivators might also be named who have arrived at similar results.

It is far better to feed the fruit properties instead of the plant; for we opine it will be found that the over-feeding of the strawberry is one of the most universal and destructive errors in its cultivation.

Some use liquid manures, composed of cow and hen-droppings dissolved in a barrel of water; but they are not well adapted to assist the fruit-bearing properties of the plant, but are good if the object be to send out runners and increase the plants.

On the opening of Spring—the latter part of April or the 1st May, in the latitude of the State of New York—it is well to give the plants an impetus, by liberally showering them every ten days or two weeks with a solution, in six gallons of water, of one quarter of a pound each of sulphate of potash, sulphate of soda, (Glauber salts,) and nitrate of soda, with one and a half ounces of sulphate of ammonia; or, if these cannot be conveniently obtained, use the same quantity of potash, sal soda, Glauber salts, and sal or muriate of ammonia; or a solution of either of them is beneficial if applied alone.

We have tried for many years various combinations in solution, but have been unable to obtain any so valuable as the first named.

We have always found plaster injurious to the strawberry, and ashes beneficial, when judiciously applied.

TRANSPLANTING.

This is a process to which the strawberry is sensitive. The plant will live under almost any treatment or any manner or time of transplanting, but will not always yield a full supply of good fruit unless this process is appropriately performed. First we speak as to TIME.

For large plantations, or for ordinary cultivators, thespring is perhaps the best season; certainly it is the time when it can be the easiest and most successfully accomplished. The ground is soft and moist at that time, and the weather is usually favorable.

The next season generally recommended is the month of September. Plants can then be easily obtained, and after the cool, moist fall weather has commenced, the ground works easily, and there is not much difficulty in making them live. There is one danger, however, to be especially guarded against in all transplanting; that is, the plants may not get so firmly rooted as to be enabled to withstand successfully the severe frosts of winter. A liberal covering of straw will assist in remedying this matter. An advantage gained over spring transplanting will be, the earth will not be as liable to pack so very hard around the plants in the fall, as under the hot summer's sun and rains, and the plants will not be so likely to be checked in their growth as in the droughts which often occur in June and July or August.

We have transplanted strawberry plants successfully for years, every month, from March until the 20th of October, without difficulty. With mulching, shade, and water, judiciously applied, it can be well done at any time. For our ordinary planting, we prefer the 1st of July for several reasons. The ground, if thoroughly prepared then, will not be subject to become so hard packed. The weeds will not be so troublesome. If the plants get well started, and are not checked in the growth, they will produce very nearly a full crop of fruit the following spring We have found that these advantages will amply repay the little extra care in mulching, shading, and watering. Ten or fifteen days' later planting will seriously lessen the first crop, according to our observations. In spring planting, March will answer south of Philadelphia, and last of April and first of May for the north.

MANNER OF TRANSPLANTING.

The *best* way undoubtedly is, to take the first runners as soon as fairly set, and remove them with a transplanting-trowel. with the roots and earth undisturbed. This cannot be conveniently done, except the plants are in the same garden with the new bed. Neither have we ever found the first runners more productive than the subsequent ones, unless they are stronger.

In most cases, plants come from a distance, and great care should be taken to get as large a proportion of the numerous fibrous roots as possible, and in order to this, the ground should always be well saturated with water, either artifically or otherw se, before the plants are taken up, and then the first thing to be done, is to mud the roots, by dipping them in a little mud-hole made in the garden soil, where the water has been poured and stirred, until it has become sufficiently thickened with the soil to leave a good coating of mud on the roots of the plants as they are withdrawn. This greatly protects the plants on a short or a longer transportation.

For transplanting, the earth should be levelled and made as flat as possible. If raised into beds or hills, it will invite the drought, to which the strawberry plant has a decided aversion. The plants should then be set out, leaving the roots in as nearly their natural spreading condition as possible; with the fingers press the pure earth compactly around the body of the plant, being careful not to set the plant too deep. If there is any old bark or decayed portion of the leaves on the plant, remove it before setting out: an old plant will usually renew itself by sending out a new set of roots on being transplanted, and it should be remembered that the strawberry plant,while it places its roots, mainly, near the surface of the ground, yet a portion of its larger roots penetrate favorable soils to the depth of from two to four feet, and even a greater depth in some cases.

DISTANCE IN TRANSPLANTING.

The Alpine and smaller varieties should always be eight inches apart, while the larger varieties should be allowed twelve to eighteen inches. Put one plant in a place, and let no other remain nearer than the above distances, and it is not material to success in cultivation whether you plant in rows, beds or hills, if you do not hill them up. We often set out in rows; or, a method by which we have enjoyed great success in producing the finest fruit, has been to prepare a plot of ground, and cover it with strong plants one yard apart, and stimulate these, by a liberal application of liquid manures or soap-suds from the wash to send out runners which will soon supply the intermediate ground with plants of nature's own planting, which is a little better done than any one else can do it; care should, however, be taken to spread the runners so that the above distance of from eight to twelve inches can be preserved.

For *field culture*, set two-plants in a place, one foot from the next, in rows three feet apart, so as to leave room for a horse-cultivator to pass between the rows, care being requisite not to approach nearer than eight inches to the plants, when at work among them. This whole process of field culture is the same in its general principles with that in the garden; except, for the convenience of a horse-cultivator to pass between them, the rows should one way be planted the same distance apart as corn; then the same treatment as to clean cultivation, and even water and mulching, as far as convenient, is desirable.

On the selection of a field for strawberries, it is very important to choose one free from all kinds of seeds and roots not decomposed.

MULCHING

This consists in covering the surface of the ground with something that is not injurious to the plant, to protect it from the intense heat of the sun or extreme cold. From one to four inches in depth is the usual custom; the latter depth for pear peach, and other fruit trees.

For the strawberry, we prefer, as soon as the plants are set, at whatever season of the year, to cover the entire surface of the ground, including the walks, with tan bark, new or old, to the depth of one inch, care being taken that it is left very thin—only a slight coating—immediately around the crown of the plant. We have pursued this plan, and have never known a plant injured by it; on the contrary, they have been decidedly benefitted. When using saw-dust, we have sometimes been a little troubled with mildew, but never with tan bark applied as above. Some of our most intelligent horticulturists say it is a specific manure for the strawberry, which others deny; we find it, at least, the best thing brought to our notice as a mulch. It is excellent to retain moisture and keep the earth in fine condition under it; very few weeds will ordinarily trouble us, where the tan is one inch in thickness, and altogether it is excellent. Were tan cannot be obtained, saw-dust will do, if not applied too thick. Leaf-mould is very good, if the soil is not already too rich. Straw is good, but green rowen or fresh-cut grass, if the seeds are not ripe, is better still; any thing, in fact, not injurious, that is convenient and adapted, can be used

WATER.

The strawberry has a great relish for good, clear, cold water. We have often seen them take a strong shower-bath at midday, in the face of the hottest sun in July, without shrinking. A slight sprinkle, just to lay the dust, does not satisfy them, but a thorough soaking is what they delight in—say a pailful of water to every six or eight plants, or every four feet square of earth. If you say "this calls for a great deal of hard work," we answer then, "do not repeat it so often, but do it thoroughly whenever attempted." A few weeks since, we sent a friend some plants of new and rare kinds. A drought prevailed, and we feared he would neglect them, so we called to see them, and found he had set out and sprinkled them in the lightest, and most delicate manner possible. Another friend to whom we gave a few plants at the same dry time, gave them a thorough and repeated drenching, and saved all his plants.

A garden engine is very convenient in a strawberry plot, for watering purposes or a stream of water so situated as to irrigate, is better still. A water-ram, and water brought up in pipes, will accomplish the same thing. Ordinarily, during the bearing season, sufficient rain falls, so that very little watering is needed: some seasons are so wet that no water is needed until the bearing season is over, and then the plants do not particularly require it; but a drought will soon compel the strawberry to cease bearing in ordinary soils. The remedy or preventive is water, water, every day, and sometimes every night and morning. The evening, just at sundown, is the best time to water plants; and in some cases it is desirable that the water should have been exposed to the sun and air before being applied, but we do not think this is necessary for the strawberry.

CULTIVATION.

Most persons bestow, erroneously, most of their labor in raising strawberries on their cultivation. On the contrary, if our directions so far are strictly followed, the work is mostly done, except gathering the fruit. We have very little work to do in the way of cultivation after planting, except watering and occasional pulling of weeds which appear through the tan, and neither of these ordinarily requires much time or labour. They must be kept clean and in good order, but we are very careful not to allow the hoe to be used nearer than eight inches to any full-grown plant, and, consequently, it is seldom or never used about the beds after the first month's planting. The reason is, the numerous fibrous roots so interlace and fill the ground for a space of six or eight inches around the plant, coming so completely to the surface, that the use of the hoe will cut off great numbers of these little roots, and we are unwilling to have our plants maimed in this way. It certainly greatly injures their bearing. The fork or spade should be kept at the same distance, for the same reason. The only time, during the year, we loosen the soil in our beds with the fork, is immediately at the close of the season of bearing, selecting the time when the ground is moist. And yet, we repeat, the strawberries must be kept clean; and the reader may here see a reason for all the minute and particular description we have given in the preparation. It needs to be thoroughly done, because it cannot well be remedied afterwards. The plants will not admit of freely working among them, except with the hand, if not kept at an unusual distance from each other, without largely reducing the crop of fruit. If our object is large and abundant fruit, the roots must not be disturbed.

One qualification to the above. When new plants are set, unless prevented by mulching immediately, we, as often as every three days or week, for a month or so, hoe or rake the ground freely, and always stir the soil as close to the plants, as often, and as much as possible, only being cautions not to disturb the roots.

RENEWAL OF BEDS.

This should be done once in three or four years, and the same ground should be planted with corn or potatoes for one season, and receive an application of lime, ashes, and salt, as advised in the article on the preparation of the ground, before it is again used for strawberries. The bed might be made to bear well, by a careful renewal of the old plants by their runners, for ten or a dozen years, but this would require rather more skill in cultivation than most persons possess.

Every year or two, if a strong runner has struck itself beside an old plant, we pull up the old plant instead of the runner, and are constantly thus renewing them. We always leave the best plants. The field cultivator has only to clean off the weeds, and prepare the soil in the spaces of three feet between the rows; allow the runners to cover that ground; then drive the cultivator or plough through, turning under the old row of plants; thin out his new ones to proper distances, and his system of renewal is complete.

TREATMENT OF BOOTS AND SHOES WHEN BURNED.—In our juvenile days we had occasion, too often, to need a cure for carelessness in burning our boots, and we used to apply, with good effect, an application we have seen recently in a late exchange. Apply, very liberally, and instantly, soft-soap to the burned leather, till it is perfectly saturated. If not too badly burned, the leather will be soft and pliable as before.

Miscellaneous.

A TOBACCO CALCULATION.

The people are in many places demanding the prohibition, *by law*, of the common use of alcoholic liquors. If such a law should be found to work well, we may next see its "strong arm' directed against the "weed" called tobacco, which though it may not cause so much human suffering as alcohol, is nearly a match for it in the item of cost. Let us glance at the statistics:—

The present annual production of tobacco is estimated to be 4,000,000,000 pounds—four billions of pounds! this is all smoked, chewed, or snuffed. Suppose it all made into cigars, one hundred to the pound, it would produce 400,000,000,000. Four hundred billions of cigars! These cigars at the usual length, four inches, if joined together, would form one continuous cigar 25,252,520 miles long, which would encircle the earth more than one thousand times. Put up into equal pieces, 240,000 miles in length, there would be over one thousand cigars which would extend from the centre of the earth to the centre of the moon. Put these cigars into boxes, 10 inches long, 4 inches wide, and 3 inches high, 100 to the box, it would require 4,000,000,000 boxes. Pile up these boxes in a solid mass, and they would occupy a space of 294,444,444—two hundred and ninety-four million cubic feet! If piled up 20 feet high, they would cover a farm of 338 acres; and if laid side by side, the boxes would cover very nearly 20,000 acres. Let some boy who reads the *Agriculturist* estimate how large a village or city would be required to furnish store houses for all these boxes. If a person smoke a cigar every twenty minutes, and continue this night and day, it would require an army of 2,500 such smokers 6,000 years to consume the above; and if each person smoked only 4 cigars a day, a pretty fair allowance we should say, it would take 45,000 smokers 6,000 years, a larger term than the human race has existed, to smoke up all the tobacco now produced in a single year. Allowing this tobacco unmanufactured to cost on an average ten cents a pound, and we have 400,000,000 of dollars expended every year in producing a noxious deleterious weed. At least one and a half times as much more is required to manufacture it into marketable form, and dispose of it to the consumer. At the very lowest estimate, then, the human family expend every year one thousand million of dollars in the gratification of an acquired habit, or one dollar for every man, woman, and child upon the earth! This sum would build two railroads around the earth at a cost of twenty thousand dollars per mile; or sixteen railroads from the Atlantic to the Pacific. It would build one hundred thousand churches costing 10,000 dollars each; or half a million of school-houses costing 2,000 dollars each; or one million of dwellings costing 1,000 dollars each. It would employ one million of preachers, and one million of teachers, giving each a salary of 500 dollars. It would support three and one-third millions of young men at college, giving each 300 dollars per annum for expenses. We leave others to fill out the picture. Is this annual outlay to increase or decrease in future? Reader, how much do you contribute to this fund?

COOKING BY GAS.

A complimentary dinner was given at Worcester yesterday, all the viands being cooked by gass, upon an improved method, invented by J. P. Blake Esq., the agent of the gas company in that city. Quite a number of gentlemen had assembled to judge of its merits, and upon all sides we heard commendation expressed. The arrangements for cooking were the most complete that we ever saw, and at the same time simple in their construction and efficacious in the results.

The oven, in particular, attracted our attention, its peculiarities consisting in the application of the gas outside, the ample supply of oxygen for combustion, and the arrangements made for the exit of its products. No heat can possibly escape, the article cooking receiving all applied. The advantages claimed by this patent are rapidity, neatness, convenience, economy and improvement in quality of food. There were 60 plates laid, the cost of cooking for which (and the bill of fare was quite excellent) amounted to only $1, 40, 400 feet of gas being consumed at a rate of 3½ mills per foot. The price of gas in this city is 2½ mills.

We present below the specified cost which would be incurred by those using this apparatus: One gallon water at 52 deg. Fahrenheit, boiled in 7 min. 20 sec., consuming 3 65-100 cubic feet of gas, 1c. 3 mills; 1 quart potatoes, boiled in 40 min. 25 sec. consumed 9 25-100 cubic feet of gas, cost 3c. 2 mills; 3 lbs. bread baked in 37 minutes, consumed 9 25-100 cubic feet of gas, cost 3c 2 mills; 4 pies, baked in 21 minutes, consumed 11 60-100 cubic feet of gas, cost 4c. 6 mills; 4 lbs. beef, baked in one hour, consumed 12 20-100 cubic feet of gas, cost 4c. 2 mills; buckwheat cakes, 15 minutes consumed 6 20-1000 cubic feet of gas cost 2c. 3 mill; 1 lb. beef-steak, broiled in 4 minutes, consumed 2 75-100 cubic feet of gas, cost 9½ mills; 3 lbs. beef-steak, broiled in 10 minutes, consumed 5 38-100 cubic feet of gas, cost 1c. 8 mills —*Boston Post.*

Trifles.—Never be cast down by trifles. If a spider breaks his thread twenty times, twenty times he will mend it again. Make up your mind to do a thing and you will do it. Fear not, if trouble comes upon you, keep your spirits though the day be a dark one.

TRANSFERRING BEES.

Mr. Eddy gives the following information, with directions, in the Puritan Recorder, in reference to this subject. We think he understands the business as well as any man :—

"The reasons for a transfer are :—The leaky condition of the hive ; 2. The bad condition of the comb. 3. the presence of the Bee-Moth. When a transfer becomes necessary, and is decided upon, the method of performing the operation is as follows :—1. Close the Bee entrance with cotton batting. 2. Nail a thin piece of board over the same. 3. Slide a zinc plate or its equivalent, between the bottom board and the base of the hive. 4. Invert the hive with the bottom board held in place. 5. Remove the bottom board. 6. Set the new hive upon the zinc plate. 7. Adjust the hive so that no bees can escape when the zinc plate is removed. 8. Withdraw the zinc plate. 9. Rap smartly on every side of the hive, for twenty or thirty minutes, until the bees are thoroughly routed, and nearly all of them have ascended into the new hive. 10. Slide the zinc plate between the two hives. 11. Set the new hive precisely in the place of the old one. 12. Remove the zinc plate upon which the new hive stands.

The operation is now complete, with the exception of a very few bees which remain in the old hive. These are now to be drummed out, at a short distance in front of the new hive, and they will return to the familiar spot. I choose to perfom the operation in the after part of the day. Care should be taken that the bees which are to be transferred, should occupy a stand by themselves. This is a matter to be attended to early in the spring. One object of the transfer is to get rid of the black comb which is no longer suitable for use. Of course I do not transfer this comb to the new hive. I loose, and expect to loose, the young which are found in the brood comb, at the time the transfer is made. For this loss, I receive more than an equivalent in the new circumstances of prosperity in which the colony is placed. The transfer should usually be made in the month of June. I prefer about the middle of the month. If it is done later than this sufficient winter stores may not be secured.

BARBADOES TAR.

Dr. A. Hunton, of Vermont, says :—"When first I tried my luck as a physician, I had in my possession a gallipot of Barbadoes tar, which I had purchased of the executors of a deceased physician. They did not know what the article was, and I kept it a long time before I knew. The first use I made of it, was to apply it to my horse's tail after pricking it ; it relieved the soreness to this extent ; the tail might be turned over the back, and the horse would not move, which was an indication that the movement of the tail was not painful.

It may not be known to every one, that Barbadoes tar, or rack oil, is the principal ingredient in British oil, or oil spike. The oil from Seneca Lake N. Y. is an inferior article. In preparing this ingredient for use, I melt the tar with an equal quantity of lard, *mixed well.*

Any person who will make trial of the above, will derive a benefit. The flesh of the horse is of a dry, inflamatory nature, and it is difficult to promote a discharge of pus ; and this article will promote this discharge more effectually than any other article known to me. When this point is attained, the inflamation will cease, and the cure is much facilitated."

LABOUR AND PRODUCTION.

The unskilled workman, who strains his muscles all day in wielding a pickaxe, or carrying a hod, is apt to think that the lawyer or the author, working with his books, in his arm-chair, has an easy life of it; but he is very much mistaken. Intellectual work is capable of great increase, and then becomes very arduous. It is harder labour on the whole, than labour with the hands, and is attended with much greater social advantages. It is generally much better remunerated and always receives far greater respect. Mere manual labour is capable but of light increase. If twenty burdens be the amount of work which a hodman can perform without pain or discomfort, he will find it very difficult to go a little beyond it, and utterly impossible to double the amount of work. In the same way, if he work twelve hours a day as a weaver, and make in that time twelve yards of cloth, it will be oppressive and dangerous to him to add a little to this supply, even were it but one or two yards. Any two men, in ordinary health working at any of these merely mechanical occupations, will do nearly the same amount of work. It is an extremely rare case to find one weaver who can do twice as much as any other. When, however, the mind or intellect comes to aid in the work, it is capable of almost unlimited increase. Some men will go through five or six times as much intellectual work as others. If a lazy clerk or petty shopkeeper in a small country town, could see how much work a Lord Chancellor, a Secretary of State, or a London Banker, goes through, he would hardly believe it possible. The same individual, by training and perseverance, may bring himself to do three or four times as much work as he could accomplish before. In all this we see the advantage of infusing skill into labour. A country like Britain exacts much labour in return for a comfortable subsistence. The listless and the lazy among us; unless they are aided by their friends, must always fare poorly, and can enjoy very few of the social advantages of this rich country. You sometimes see men standing at shop-doors holding placards in their hands, or you see them selling trifling articles on stalls in the street; these men are very poor, but they are also very lazy. They give a great many hours to their occupation, but there is very little work in these hours. It would be felt as a dreadful social evil to require so much labour from men, if they could only increase it by increased muscular exertion, or by working a greater number of hours. The hodman is still poor though he carry his twenty loads, and he cannot carry much more. The handloom weaver is still poor though he works for 12 hours a day—he would not be very rich if he worked for 24 ; but he cannot even work 18 to obtain a third more wages. Fortunately, however, it is not thus that labour is increased; it is by the increase of skill and capacity, which enables people to do much in a short time, and with apparent ease. To acquire skill, great patience, exertion, and perseverance are necessary.—It is generally acquired at the time of life when the faculties are fresh and strong, and capable of great effort without exhaustion, that is, in the period of youth. The education or the professional training which young people undergo is the acquisition of skill, to enable them in after life to work with great effect and with comparative ease. It is a difficult and arduous task to learn a language; but when it is once learned, how easy and agreeable it is to use it! He who has thoroughly learned the French language, talks with ease and fluency to a Frenchman ; it is no effort to him—rather an amusement. Such is the effect of acquired skill.—*Messrs. Chambers' Political Economy for the Use of Schools.*

CURES FOR CROUP.

This is a distressing affection, often sudden in its attack, and unless promptly and vigorously resisted, fatal. Some children are predisposed to it and in such cases they should sleep in a room with their parents, or a nurse, easily aroused. Remedies should always be at hand; it may be too late to wait the arrival of a physician. The following are recommended. We can affirm the efficacy of the "cold water" cure from our own experience :—

"For croup, take one teaspoonful of Ipecac, one wine glass full of vinegar, and a little honey or molasses. Simmer the whole together, and give the child till it produces vomiting. The dose to be repeated till a cure is effected. Any quantity may be prepared at a time, and kept on hand for use at a moment's warning.

"The above is a common remedy. Severe attacks of the croup may also be relieved by simply giving goose oil and molasses.

"A physician says he was called to a child, thought to be dying of croup. He administered Ipecac in a little warm water, till it produced vomiting and continued the course, bathing the feet in warm water, &c. until the third day, when recovery was complete.

"A standard medical author says—"I have saved life in the last extremity, when the breath was almost totally stopped, with rattlesnake's oil; four or five drops given on sugar, is sufficient for a child of two years old at a dose. This cuts up the phlegm, and frees the passage almost instantly."

"A correspondent of the *C. Gentleman* says:—"I would recommend to the enquirer after a cure for croup in children, to procure some work on hydropathy or water cure—the most sure and efficient cure for croup or any other curable disease that flesh is heir to. A cloth, 4 to 6 folds of linen or cotton, wet in cold or tepid water, and held on chest and throat by the hand, for 5 or 10 minutes, has been all that we have used for the last seven years. We ask no better.

Curiosity of Children.—The curiosity of the child is the philosophy of the man, or at least, to abate somewhat of so sweeping a generality, the one very frequently grows into the other. The former is a sort of balloon, a little thing, to be sure, but a critical one, nevertheless, and pretty surely indicative of the heights, as well as the direction, to be taken by the more fully expanded mind. Point out to me a boy of original, or what would generally be called eccentric habits, fond of rambling about, a hunter of the wood side and river bank, prone to collect what he can search out, and then, on his return, to shut himself up in his room, and make experiments upon his gatherings, to enquire into the natural history of each, according to its kind—point such a one out to me, and I should have no difficulty in pronouncing him, without the aid of physiognomy, to be a far better and happier augury than his fellow who does but pore over his books, never dreaming that there can be any knowledge beyond them. Of such stuff as this, were all our philosophical geniuses, from Newton to Davy, and so, from the nature of things, they must generally be. And no wonder. The spirit that is powerful enough to choose, aye, and to take its own course, instead of resigning itself to the tide, must be a very powerful spirit indeed—a spirit of right excellent promise.—*Kidd's London Journal.*

DIAMOND DUST.

[*From Eliza Cook's Journal*]

The man who does not know how to leave off, will make accuracy frivolous and vexatious.

Everybody likes occasionally to take refuge in a gentle shade of misanthropy, and to feel ill-used when there is nothing to amuse him.

We sometimes think we have no romance, left, but some of us do still look at things and people as they are, and that alone produces romance enough.

In most cases it is not contempt, but conventionality, that induces us to pass by and ignore what it is not consistent with good taste to know anything about.

A critic *should* be a pair of snuffers . he is often an extinguisher, and not seldom a *thief.*

Poetry is to Philosophy what the Sabbath is to the rest of the week.

We may keep the devil without the swine, but not the swine without the devil.

We have little moral faith in those who have never been imposed upon.

Excessive indulgence to children, by parents, is only self-in-dulgence under an *alias.*

A Young Farmer's reply to the young damsel who has determined that "A Farmer's Wife she'll be" :—

I love that laughing girl, however wild she be,
Though she's full of fun and frolic, she's none too much for me,
I hate your sad and gloomy girls—a merry life for me:
"If e'er I marry in my life," that girl my wife shall be.

I too love a country life, and love the joyous breeze,
I love to hear the singing-birds, among the leafy trees;
The lowing herds and bleating flocks make music sweet for me:
"If e'er I marry in my life," that girl my wife shall be.

I love her pretty face, and I love her open mind,
I feel convinced that lively girl is also true and kind,
Her sparkling eyes, her curling lip, are lovely gems to me:
"If e'er I marry in my life," that girl my wife shall be.

Let other lads who love them best, court ladies of the towns,
But give me this dear country girl, I'll laugh at fortune's frowns.
With sunny smile and happy view, Oh! would she say to me,
"If e'er I marry in my life, my boy your wife I'll be."

L. H. W

Preservation of Plants.—Plants may be completely protected from the depredations of insects, by washing them with a solution of bitter aloes; and the use of this wash does not injure the health of these plants in the slightest degree; and, wherever the solution has been used insects have not been observed to attack the plants again.

Editorial Notices.

IMPORTATION OF IMPROVED STOCK.

Mr. William Miller, of Pickering, has already, this season, made a successful beginning, in the most important enterprise of improving the already excellent stock of this part of Upper Canada. His importation consists of four splendid heifers purchased by him at a very high price in Scotland. We are glad to learn that the importation, though made at a heavy expense, was effected without any damage to the young heifers. They passed through Toronto, a few days ago, having just arrived, by way of Quebec; and we are informed that they are of the very highest excellence in point of breeding and quality. They are from the stock of Mr. Booth, an eminent English breeder. Mr. George Miller, we may add, has this Spring obtained two fine Bull calves from animals of the same stock, imported by him last year. The Messrs. Miller are indefatigable in their efforts to improve the farming stock of this country: and their enterprise has been repaid them handsomely in the high prices they have been able to sell the produce of their imported stock at. Mr. Miller, we understand, received with his stock, four of Campbell's Iron Ploughs, of the most approved construction. With improved stock, and improved implements Canadian agriculture cannot fail indefinitely to progress.—*B.*

COUNTY AGRICULTURAL REPORTS FOR 1855.

The Board of Agriculture offers a premium of £15 for the best Report on the farming of each of the following Counties, viz: Simcoe, Bruce and Prescott. If the successful Report be written by the Secretary of the Agricultural Society of the County, the premium will be increased to £20. Competitors must send their essays to the Board of Agriculture, Toronto, on or before the first day of September next.

BARON de LONGUEUIL'S PRIZE.

We request the attention of our readers to the liberal offer of Baron de Longueuil, which was accidently omitted in the Prize List, and did not occur to us till the form was made up.

The Baron offers £20 for the best Hereford Bull, of any age not exceeding 4 years, that has covered cows in the Province this season. It is to be hoped that this handsome offer will elicit spirited competition at the next Provincial Exhibition at Cobourg.

☞ We have received a number of catalogues of the stock to be offered by Col. Sherwood, by auction, at Auburn, New York, on the 20th inst., advertised in another column. We will send a copy of the same to any who may desire it. We have also a few catalogues of the stock nf Colonel Morris.

Provincial Agricultural Association of Lower Canada

The Annual Exhibition of this valuable Society will take place at SHERBROOKE, on the 12th, 13th, and 14th of September, 1855. Like the Upper Canada Association, competition is open to all Canada. No certificate of entry can be received after the 1st of September. Premium-lists can be obtained on application to the Secretary, Wm. Evans, Esq., Montreal; or to the Secretary of the Board of Agriculture, Toronto.

FIFTEENTH ANNUAL REPORT OF THE RESTICOUCHE AGRICULTURAL SOCIETY FOR 1854.

This official document bears pleasing evidence of the progress of this important Society, which has done a good deal during the past year, as well as in previous years, in advancing agriculture, by the importarion of seeds, stock, &c. The agricultural capabilities of New Brunswick, we are inclined to think, are generally very much undervalued.

Market Review.

In England complaints are made of the cold backward weather and fears are entertained for the next harvest. The European *Times* of the 5th May has the following:—

"Everything, in point of fact, wears a gloomy appearance. Even the weather is enough to make people misaerable, if increased taxation, diminished trade, and the prospect of a long war, were insufficient causes of themselves. We are now in the first week of May, with the thermometer at a temperature more like that of January or February than the month of flowers. We have not yet had a glimpse of spring after a winter of unexampled severity. Nature has not yet put on her mantle of green, and the gardens and fields seem, in their gloom and want of verdure, to tipify the ills which oppress society. The absence of rain is universally felt, for, considering the season, the drought has been of almost unexampled duration. Grumbling, it is said, is characteristic of the farming profession, if it be so, the husbandman may be pardoned, in this state of things, for giving way to it. His spirit, nevertheless, must be a little cheered by the tendency of prices, and Mr. Bright did not exaggerate the other evening in the House of Commons when he said that the value of wheat had increased to the extent of six shillings a quarter. This rise was attributed, adroitly enough, by Mr. B. to the failure of the negociations at Vienna and the continuance of the war; but some portion of the rise is evidently due to the absence of sunshine and the want of rain. When we are learned enough to read the operations of nature, and to call the planets which surround us to account for their waywardness, these anxieties about the weather, which play so important a part in the destiny of our land, may probably cease; but in the meantime, the man of business, the philosopher, the statesman, and the patriot, may be pardoned for a commendable uneasiness on this point A bad harvest would consummate our misery—wou'd prove the heaviest blow which has fallen on England during the century. Let us hope that we may be spared the scourge."

The following are the quotations (in sterling) of American produce in the Liverpool Corn Exchange, May 4. The column headed "higher," shows the rise within the then last fortnight :—

	s.	d.		s.	d.	Hghr.	
Wheat, per 70lbs.							
Genesee	12	6	to	12	9	0	9
Ohio and other sorts	12	6	—	12	9	0	9
" " red, mixed	11	6	—	11	9	0	9
Flour, per brl.							
W. Canal and Canada, sup.	38	0	—	42	0	1	6
" " " No. 2	37	0	—	40	0	1	6
Philadelphia & Baltimore	40	0	—	44	0	1	6
Genesee & Ohio, ex. sup.	43	0	—	46	0	1	6
" " sour.....	38	0	—	41	6	1	6

The weather had improved, rain had fallen, and vegetation was rapidly advancing.

The *Pacific*, which arrived on the 30th ult., brings us several days later news. Her market reports are to the 18th. Breadstuffs, in consequence of the favourable weather, had not advanced in price. The quotations are:—Western Canal Flour, 40s to 42s ; Ohio, 45s to 46s ; White Wheat, 12s to 12s 8d ; Red, 10s 9d to 11s 9d.

TORONTO, May 31, 1855.

The news by the *Pacific* had little effect on the Toronto markets. The three principal buyers agreed not to exceed 11s 3d for best samples of wheat ; and although sellers stood out for a higher figure, we did not hear of any sales beyond that price. Higher prices have been paid for good samples during the last ten days ; but the largest sales have been at $2 and $2¼. Flour—best Miller's, at retail, 55s ; wholesale, 45s; Farmer's sells at $10 per barrel. Oats scarce at 2s 6d to 3s 6d per bushel. Hay $22 to $27. Potatoes sell at 2s 9d to 3s, large importations having been made from across the Lake. Fresh butter, 1s to 1s 2d.

The prices of all kinds of produce rule high notwithstanding the prospect of a good harvest in the Western States, and also in Canada. The weather has been cold, and for some time we had no rain of consequence in this vicinity. Still the crops look well, and the refreshing showers of the 1st instant will make amends for the past.

DURHAM BULL CALF FOR SALE.

A BULL CALF, aged Eleven months. For pedigree and price, apply to

WM. HENRY BERESFORD.

Newmarket, May, 1855 6

COMBINED REAPER AND MOWER.

Monny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught—the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground ; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $130. We are also manufacturing Buroll's Reaper, price $120 ; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, May 6, 1855.

Sale of Imported Short Horned Cattle, South Down Sheep and Suffolk Hogs.

I WILL sell by Auction at my residence on Wednespay 20th June next, my entire Herd of Short Horned Cattle—consisting of about Twenty-five head of my choice animals. Nearly the whole of them are Imported, and their direct descendants.

Also about Seventy-five South Down Sheep. There are imported from the flock of Jonas Webb, Esq., of England, and their decendants.

Also, a few Suffolk Hogs, bred from the importation of J. C Jackson, ESQ.

Catalogues, with the pedigrees and further particulars ,will be ready about 2 th April, and can be had at the Offices of the different Agricultural Papers in this State, and Ohio Cultivator and Indiana Farmer, and by application to me.

TERMS OF SALE.—For all sums under $100, cash ; over $100 to $150, three months ; over $150 to $300, six months ; and all over 300, six or twelve months credit, on approved notes with interest.

J. M. SHERWOOD,

April 5, 1855 Auburn, N. Y.

DAVY'S DEVON HERD BOOK,

NOW ready, a LARGE SUPPLY of both 1st and 2nd vols. bound in one book, and containing all the subject connected with the Devon records, of both England and America up to the present time ; also as a frontispiece, the beautiful engraving of the celebrated picture known as the "Quarely Testimonial" which is a full length portrait of Mr. Francis Quarely, now living, at 91 years of age. It is also illustrated with two animals, Prize-winners in England. Price. $5, can be had by enclosing the amount to B. P. Johnson, Cor. Sec. of N. Y. State Society, Albany, N. Y., Luther Tucker, Ed. of *Country Gent*, Albany N. Y., Sandford Howard, Boston, Mass., D. D. T. Moore, Ed. of *W.G. & S. Register* N Y., A. B. Allen, Ed. of *American Agriculturist*, N. Y., Saml: Sands, Ed. of *American Farmer*, Baltimore, Md., A. M. Spangler, Ed. of *Progressive Farmer*, Philadelphia, Pa., Lee and Redmond, Eds. of *Southern Cultivator*, Augusta, Ga., and Wm McDougall, Ed. of *Canadian Agriculturist*, Toronto, C.W. It gives me pleasure to state that Mr. Davy has solicited Mr. S. Howard, of the *Boston Cultivator*, to collect pedigrees and illustrations in this country for the 3rd. vol., and has authorised Mr. H. to obtain information as to any and all mistakes which may have been made as to the recording of American animals in Davy's 2nd. vol., and such corrections will be made in the 3rd. vol. The Plan proposes that a copy of all the pedigrees and illustrations collected by Mr. H , as the Editor in America, shall be forwarded to Mr. Davy, and a copy of those collected by Mr. D. will be sent to Mr. H. in this country. The whole matter will be published in America for our use, and in England for their use, by which means an American and English Devon Herd Book will be united, ond the price reasonable, as the expense of English printing and duties will be saved. This concert of action has been brought about by Mr. Davy's good feeling and liberality towards this country ; and I am only the instrument through which Mr. Davy acts ; and from this time forth Mr. Howard will receive all communications on the subject, as will appear by reference to his advertisement.

All Editors who will give the above three insertions, will receive a copy of the 1st 2nd and 3rd vols.

L. G. MORRIS,

Agent for J. Farmer Davy's Devon Herd Book.

ENGLISH CATTLE
IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,

Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs. BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs. Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commission Charged.

Horse,	each,	$80
Bulls or Cows,	"	6
Ram or Ewe,	"	3
Three Sheep from the same owner, each,		2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner, each,		22
Ten " "	" " "	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses, &c., as follows:

Horse,	each,	$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer provision for 50 days.

Horse,	each,	$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels, provision for 60 days

Horse,	each,	$70
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and Col. Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased, by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

Breed.	Horse.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel.	If insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

		$.	$.	$.	
Thorough Bred Horses, from	-	100	to 250	125	
Short Horn or Durham Bull	-	400	" 150	75	
Do Cows	-	200	" 300	400	
Do yearling Bull	-	200	" 1 00	500	
Do do Heifer	-	175	" 400	250	
Herefords Bull	-	300	" 800	500	
Do Cows	-	200	" 600	250	
Devons Bull	-	300	" 800	400	
Do Cows	-	200	" 500	250	
Ayrshire Bull	-	150	" 350	300	
Do Cows	-	100	" 250	200	
Alderney Bull	-	150	" 225	175	
Do Cows	-	100	" 150	125	

			Will weigh when killed and dressed	Will shear washed wool	
Cotswold Sheep	Ram	- 100 to	300	130lbs 125	12to15lbs
Do	Ewe	- 25 "	100	30	
Leicester Sheep	Ram	- 100 "	200	120lbs 100	
Do	Ewe	- 25 "	80	25	
South Down Sheep	Ram	- 100 "	300	112lbs 125	6 to 9lbs
Do	Ewe	- 25 "	100	30	
Hampshire do	Ram	- 75 "	125	120lbs 1 0	6to10lbs
Do	Ewe	- 15 "	25	26	
Swine	Boars	- 25 "	50	40	
Do	Sows	- 15 "	40	25	
Merino Sheep from Spain					
Mules from Spain.					

5

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture of Upper Canada, No. 1, Vol. 1st, pp 160. Toronto: printed and published by Thompson & Co, for the Board of Agriculture.

This work will be issued in quarterly parts, four of which will form a volume. The first part embodies the transactions of this Provincial Association from its institution in 1846, down to the commencement of the year 1851. The next number will contain an account of the further proceedings of the Association and the Board of Agriculture, Prize Essays, Abstract of County Reports, &c

The work will be sent free by post for 5s per annum. All communications and remittances to be addressed to the Secretary of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855. 5.

THOROUGH BRED SHORT-HORNS.

THE Subscriber offers for sale, 3 Thorough Bred Short-Horn Durham Bull Calves, descendants of the celebrated Bull, "Bellville," champion of England, Ireland and Scotland.

RALPH WADE Snr.
Spring Cottage, Hope.

May 22, 1855. 6—3t.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at Cobourg in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND. *Secretary.*

Office of the Board of Agriculture
Toronto, March, 1855.

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision

A man and three boys can turn out from 5,000 to 10,000 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,
Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

LAKE-VIEW NURSERY.

THE Subscriber offers for sale the present Spring, a very choice assortment, of Fruit and ornamental Trees, Flowering Shrubs, Roses, Dahlias, Green House, and bedding-out Plants, Fruit Tree Stocks, Hedge Plants, and a general assortment of Nursery Stuff. His Stock of Dwarf Fruit Trees, will be found very complete, bearing Trees of which can be furnished to order. Orders respectfully solicited.

☞ Descriptive Catalogues can be had on application.

JOHN GRAY

Lake-view Nurseries, Toronto, 1855.

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second, Bred by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds ; if grade, 5s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (I 621 English Herd Book), was sold in 18.3 for $4,000.

FREDERICK WM. STONE.

Guelph, April 24, 185 .

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturists and Horticulturists, that they have received a large and varied assortment of

FARM & GARDEN IMPLEMENTS

And would solicit a call from parties about to purchase, at No. 77, corner of Yonge and Adelaide streets, Toronto They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand. Reaping and Mowing Machines on the most improved principles, will be for sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

FARM MANAGER.

A SCOTCHMAN, in the prime of life, wishes to obtain a situation as above, in which he would make himself generally useful. He is quite competent to take the entire management of a Farm; has farmed both in Scotland and Lincolnshire—is sober and industrious, and can be highly recommended.

For reference apply to PROFESSOR BUCKLAND, Board of Agriculture, Toronto.

May 31, 1855. 6.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture. Horticulture, Farm Mechanics*, and to the advancement of the *Farmers' interests generally* It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, beside Editoral and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributers to this journal.

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production* and asks no man's support under a false name. It is a true not a spurious *Canada Farmer.*

TERMS

Twenty copies or upwards, each - - - - - 2s. 6d.
Single copy - - - - - - - - - - - - - 5s.

*** The *Agriculttrist* is not liable to *Postage.*

☞ Newspapers inserting the above will do us a favour, and entitle themselves to a copy without exchange.

WM. McDOUGALL,
Publisher, Toronto.

PRINTED AT THE GLOBE OFFICE, 22, KING ST., TORONTO

THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VIII. TORONTO, JULY, 1855. No. 7.

Agriculture, &c.

DEEP PLOUGHING.

Ultraism in agriculture is one of the greatest obstacles to judicious practice. A good illustration of this fact is presented in the ideas which have been promulgated in regard to ploughing. "Plough deep, you cannot plough too deep"—is the unqualified advice of some teachers No discrimination is made in reference to the character of the soil, the kind of crop to be cultivated, the quantity of manure to be applied, or any other circumstance. Others soften the tone of the doctrine so much as to admit that deep ploughing is not everywhere best, though they still recommend it generally, because it is supposed to be applicable to a "majority" of cases! But why should not every kind of soil be ploughed just as it ought to be! What would be thought of a physician who should adhere, undeviatingly, to a special course of treatment because it is adapted to more than half of his patients, when at the same time he knows it is more or less unsuitable to the remainder? The more intelligent practitioner would be surprised at such a disregard of the maxim, that there are no specifics in medicine—the proper management for each case depending on the peculiar temperament, organization or condition of the individual. There should be a similar modification and application of the principles of agriculture, as success must ever depend on the judgment exercised in devising the course of practice for every case which occurs.

Every farmer may have noticed the great difference there is in the texture and composition of soils. Some are physically too heavy and others too light: some are naturally rich,—the earth to a great depth containing abundance of the elements of plants; others are naturally barren,—whatever fertility they possess being the result of artificial manuring and limited to a few inches of the surface. These different conditions suggest different courses of cultivation. Heavy soil should be made lighter and light soil heavier. Deep tillage and pulverization are required for the first object, and a more shallow tillage and consolidation for the second. The one is as necessary as the other, according to the nature of the soil. In deep soils, we supply new sources of food or plants by bringing to the surface the fresh and unexhausted substratum. On poor and thin soils, the same operation would only bury the fertile matter beneath a covering of sterile earth.

These remarks relate to ploughing by the ordinary method of reversing the furrow slice, or that part of the soil moved by the plough. The effect of the subsoil plough is different from this, inasmuch as it loosens, without otherwise changing the former relations of the soil. This is advantageous where the subsoil is too compact for the roots of plants to penetrate readily, and may be useful in various situations where deep ploughing by the ordinary mode would by unadvisable.

Our ideas on this subject have been heretofore given more in detail; the object at the present time is to support them by reference to good authorities. At a late meeting of the Cirencester Farmers' Club, the subject of deep ploughing was discussed, and from a report of the discussion published in the *Agricultural Gazette*, we take the following extracts:

Rev. J. S. Haygarth, Principal of the Cirencester Agricultural College, said—

"A great deal [in reference to the depth of ploughing,] must depend on the composition of the soil, for it is clear that no amount of ploughing, stirring, or grubbing, can develop any fertilizing properties if the elements of fertility are not present in the soil. In clay soils, deep culture is so pre eminently successful, because such soils contain inexhaustible supplies of all the inorganic matters required as food for plants, which are rendered soluble by coming into more frequent and more perfect contact with the air, and because such stiff and heavy soils more than any other, require to be rendered more porous. But in purely silicious land, deep ploughing cannot possibly be attended with any benefit, since it is too porous already, and does not contain any constituents which, in contact with air, are rendered soluble. On the whole, deep culture will be found the more successful in its results the more the land resembles, in composition and mechanical condition, heavy clay, and its advantages will be less perceptible the more it approaches purely sandy soils."

Mr. Haygarth, however, admitted the advantages, in some instances, of subsoil ploughing, especially where acids are formed within the reach of that implement. At the same meeting, Mr. Lawrence said—

"I am no advocate for radical reform, and turning matters upside down, and bringing the subsoil to the

surface; but merely that it should be loosened by the common subsoil plough, and rendered accessible to atmospheric influences, and thus gradually prepared for vegetable nutrition. When so prepared the ordinary plough may be set from time to time a little deeper, and the subsoil, be thus gradually incorporated, with the surface soil. Subsoils of sand, and of some gravels, are exceptional cases, but in nearly all clays and in all sub oils of an aluminous or tenacious nature and into which we know the roots of our crop will extend themselves in search, of food, common sense would seem to point out the advantage of adopting those means by which that food can be most readily supplied."

The editor of the *Mark Lane Express*, speaking in reference to ploughing and pulverization, observes:

"On very light land it is not so much mechanical tillage as abundant manuring that is the principal agent in producing crops; so that our observations will mainly bear upon the culture of loams and clays Where the plough can turn up only a thin staple of loose, weak sand or peat, or flinty loam, the pulverization of the soil becomes almost a secondary point to the preservation and even increase of its tenacity; hence the great value of the presser and roller upon such land, and the endeavour to perform as much as possible of the tillage without the plough, which always lightens and turns over, whether the ground needs it or not."—*Boston Cultivator.*

THE SELECTION AND CULTURE OF TURNIP-SEED.

BY A PRACTICAL FARMER.

To obtain, and preserve from intermingling a true Stock of good Turnips is of great importance to every farmer; and but few know what course to pursue to insure good seed from a well proved variety, or care much about the subject, generally confiding themselves to a purchase from the nearest seedsman or market gardener, who, in his turn, receives his usual annual supply from his "London seed-man," from 'the old stock," which, in reality, is in a great measure literally too true, it being sufficiently notorious that "old stocks" are continually mixed off, to the no small loss of the growers. I have more than once lost a crop, in my early days of business, from this cause; but since I have adopted the practice of growing my own seed, I have never lost one, or indeed had a defective crop; and this plan I have followed for many years, so that my "stock," from careful selection and close attention, has become well known, and long been in high favour in many districts.

The stock of any peculiar variety, if really good and hardy, should not be crossed with other like stocks; but if defective in any one point, *i. e.*, size, form, colour of flesh, quality, hardiness, habit of growth, quantity of top, length of neck, &c., &c., it may be profitably crossed under judicious care. I have grown in competition many varieties, in separate rows, along side each other, both of the Swedish and common sorts (having, on one occasion, twenty-four Swedish varieties, besides many of the common varieties), taking care to note their peculiarities: and my judgment has at last, settled down upon two principal varieties for my own growth: the Purple-top Swede, improved by myself, and the Red Round or Globe, from a known stock of fifty five years' standing. The Swedish variety is a cross from a very hardy and well formed globular stock, with the best-formed and largest bulbs of Skirving's first new stock; combining, therefore, advantages of both. The Red Round is of hardy growth, buries itself deeply in the soil, and produces a heavy crop. Both varieties are of excellent quality of flesh. It may be thought unimportant to the general reader to name these matters, but it is surprising to what extent growers will go to obtain first class stocks, and at great expense. I once saw a large and beautiful bulb of a purple Swede variety, from which the grower was about to obtain a stock, and for which he assured me he would not take £100. This individual did subsequently show some fine specimens at the Smithfield Club Show, and his stock has long stood deservedly high.

There are so many good "stocks," throughout the country, that it would be envious to name any single one; but it does behove farmers to look closely after a good stock, and to procure growing seed, come from whence it may. It is not desirable to be seed of the first year, the second year is better; it is more liable to run wild, and not to bulb. Seed will, if kept well, grow freely in the fourth or fifth year; but never sow without trial, if it is old.

The common practice of procuring seed by the London house is, to have it grown by contract. The seed-man finds the seed, and the grower is bound by contract to deliver it, in marketable condition for a certain price per bushel, subject to the subversion of the seed-man during the period of growth.

The district of Romney Marsh, in Kent, is the most resorted to by the London house, and as much as 2000 acres of seed are said to have been grown there in one season. The usual course is to sow the stock on the hills, and take the plants into the marsh to set. This is called transplanting, and is indeed to be preferred. Many, however, prepare the soil, and merely drill in the seed, taking care to look the plants carefully over in flowering time I do not attach such great importance to the system of transplanting the bulbs as is generally given to it It is often adopted from convenience, as giving more time to prepare the soil The stock may be kept equally true by the ordinary drill course, under judicious care The great thing is, to prevent intermixture and inoculation: hence, no two similar varieties ought to be grown near together. Swede seed may be grown near to a common variety, without much danger, as the latter sort will be mostly out of flower before the Swede comes in. It is, however, best to be far apart in all cases as bees are very industrious inoculators, and in this kind of propogation work is injurious y

Cultivation and Management.—I shall detail my own course of management of this crop throughout, which, I think, will suffice for every useful purpose, although, in minor points I may differ from others.

Soil &c.—This should consist of good strong loam: but rich soil of any kind will produce a crop. It should be prepared in the autumn by deep ploughing and pulverisation, but not reduced to too fine a tilth A somewhat open state, so as not readily to run together from heavy rains, is best.

Selection of Bulbs for Stock:—To keep up a good, a regular, and true stock, I select from the field crop of turnips as many of the best bulbs of like character and form with the stock I cultivate as I require; and occasionally [as this year] I obtain a renewal of my stock from a single turnip. These are planted in a square or plot to themselves, in the midst of the general crop, taking care to have the intervals wide enough to prevent the intermingling of the pollen. From this "best selected," I grow my own crop out of which my selection is again made

year by year. By this course, not only a uniform, but an improved stock may be kept up. It would be better to grow this "best selection" elsewhere, if freedom from inoculation could be insured. I find, however, small plots are in this way most injured, and have therefore, adopted the above course, *i. e.*, to plant them in the midst of the general crop. They are but slightly affected in this way—generally true to their stock.

PLANTS FOR TRANSPLANTING.—In the early part of August, I prepare a large seed bed, or plot of ground, sufficiently large upon which to grow the number of plants I require for transplanting. An acre of land well filled with young, strong plants, will transplant a large breadth possibly 15 to 20 acres. The land should be brought to a fine stilth, as for turnips. I sow from the stock of my "best selected;" and if nicely sown, or equally drilled, and not too thickly, they will not require further attention till the season for transplanting. If they come up too thickly, they will require thining, as it is necessary to have a good bulb to each plant: but a small one, of walnut size, will suffice.

TRANSPLANTING.—The season for transplanting may be taken to be any open weather prior to the month of Feburary, and even in that month I have succeeded; but the operation ought to be completed in November, or earlier if convenient, as the more the plants grow before the severe weather sets in, the firmer hold they have upon the soil, and the greater is their safety. My practice is, to plough the prepared land immediately before setting, in about ten-inch furrows. When all is in readiness, and the weather suitable, I carry on the whole operation together. The bulbs are drawn and planted the same day. In setting, each setter is attended by a lad, who, carrying a quantity of plants in his basket, carefully deposits one in each hole, or rather cleft made by the setter. The setter, with his spade advancing along every alternate furrow, makes a cleft at about 12 to 15-inch intervals, according to the size of the plants —the larger the plants the wider the interval. With his foot he closes one cleft upon the plant as he advances to make another, and in this way he proceeds expeditiously and satisfactorily. In dry, open weather during the winter they should be looked over, to see that all the plants are fairly earthed up, and all vacant spaces renewed. Early in the spring they should be well hoed and cleaned, and the bulbs kept firmly pressed to the soil by the foot, if needed.

FLOWERING.—This is an important part of the management, and if neglected many evils arise: bastards and intermixtures will show themselves in succeeding crops. Like many secrets in business, this is simple enough when known. Yellow-fleshed turnips produce a light pale yellow-coloured flower. White-fleshed sorts, a bright deep gay yellow colour. This is the chief distinction. All bulbs therefore, bearing a flower differing from the general stock must be pulled up and destroyed as soon as they appear. This will require almost daily attention, as the pollen would, immediately on appearing, inoculate its neighbours. The varieties of white-fleshed turnips produce the same coloured flowers. The detection of Red Rounds amongst White or Green Globes is, I believe out of the question—it must be detected in the setting; but yellow-fleshed turnips, particularly Swedes, are easily seen: but the Scotch yellow, and some of the hybrids, are with difficulty detected.

HARVESTING.—The period of ripening is from the latter end of June to the beginning of August, according to the variety. Swedes are the latest sort The ripening may readily be known by the change of colour. A good rule is this, when the undergrowing pods are of a deep-purple colour, the outergrowing pods will generally be dead ripe. The whole may then be cut. My practice is to cut the crop into reaps, and tie them into small sheaves. If the weather is hot and fine, I generally thrash from the field; but if unsuitable, I put the crop into stack in the same way as the mustard crop, *i. e.*, commencing with a round shock in the middle of the steddle, and lying round to the outside. In this way the stack may be built so as to allow the bottom end of the sheaves at all times to droop downwards, so as to shoot off rain.

THRASHING AND DRESSING FOR MARKET.—The thrashing may be either by flail or machine. I prefer the flail, as less is thereby split. On a large cloth, five or six flails will thrash much seed in a day; and dressing may most advantageously proceed at the same time. This I generally complete with proper seed sieves by aid of wind only, as but few dressing machines are well calculated for dressing seeds properly. Of course it will require passing through the sieves till it is well dressed. The sieves I use are of wire; the meashes, from four to eight strands to the inch. A common corn-ridde will do to separate the seed from the cosh. The seed if thoroughly dry, will keep well for years; but if in the slightest degree damp, it is best to let it remain in stack till the following spring.—*Mark Lane Express.*

GREAT FRAUD IN GUANO.

[*From the Country Gentleman.*]

Every one acquainted with the guano trade of Great Britain is aware that adulteration is carried on to an enormous extent. The laws are stringent, and the penalties in case of detection severe, yet the profits are so large and the difficulty of proving the fraud so great, that numbers of dishonest men are willing to brave the chances of detection. The agricultural press, when in the hands of honest, independent men, untrammeled by business connections, is the great safe-guard against these and other impositions; but, though the British agricultural journals are mostly of a high tone and character, their price prevents an extensive circulation; and, indeed, comparatively few farmers take any agricultural paper whatever. Under such circumstances, therefore, it is no wonder that fraudulent manure dealers reap a rich harvest.

We have long been convinced that there were parties in this country engaged in manufacturing various artificial fertilizers which are of little value—and we have done our part towards exposing their fraudulent practices. We were also aware that inferior guanos are often sold under an assurance that they are equal or superior to the best Peruvian, but we had no idea that there was any one in this country engaged in the manufacture of guano. We are sorry to say we have been deceived. Numerous as are our agricultural papers, great as are their circulation and influence, they are found insufficient to prevent unscrupulous men from attempting to palm off on the credulous farmers of our broad domain a comparatively worthless article, at a high price, under a false name, and, what is most to be regretted, it is one of the professed friends and teachers of scientific agriculture, that is engaged in this deception.

How we discovered this fraud, we are not at liberty to state. Suffice it to say, that some six weeks ago, we were informed that an article known as

Mexican guano was taken to an establishment, near Newark, N. J., and there mixed with plaster, salt, sugar-house scum, Peruvian guano and quick-lime, the whole ground up together and put in bags marked "CHILIAN GUANO."

Following the directions of our informant, we proceeded to Newark, and there found a large heap, of about 250 tons of Mexican guano, and some 200 tons of the manufactured article in bags, marked "Chilian guano," as we had been informed. We also learned that a considerable quantity had already been shipped to New-York and Boston, and one gentleman said he believed a good portion of it had been sent to England.

In New-York we were offered the Chilian guano, if we would take it in quantity, at $35 per ton.

We took samples of both the Mexican and Chilian guano, and made careful duplicate analys s of them in the laboratory of Prof. Carr, of this city, chemist to the New-York State Agricultural Society. The following are the mean percentage results of the analyses.

MEXICAN GUANO.

Sand,	0.5
Organic matter	5.0
Philosphate of lime	26 0
Carbonate of lime	68.0
	99.5

CHILIAN GUANO.

Water,	4.0
Sand,	2.4
Organic matter,	15.3
Phosophate of lime,	24 5
Sulphate of lime, (plaster)	9 5
Chloride of sodium (common salt)	6.2
Carbonate of lime (chalk)	37.6
	99 5
Ammonia,	1.06

Having obtained these results, we proceeded once more to Newark, and there received the following account of the modus operandi, adopted at the factory.

The bags are first marked "CHILIAN GUANO;" they are then moistened with water, and laid in a heap, in layers, with a quantity of Peruvian guano between each layer.

The sugar house scum is pounded fine. Three barrowfuls, of "five half-bushels" then are mixed with six barrowfuls of Mexican guano. To this are added 1½ bushels common salt, 1 bushel of plaster, 3 bushels of Peruvian guano and ½ bushel of quick lime. When the Peruvian guano and lime are added, "they make it tremendous strong." In other words, the lime sets free the ammonia of the Peruvian guano, and gives the manufactured Chilian guano a strong smell of hartshorn, which, to the unreflecting, is a sure indication of a valuable guano,

The floor where the bags were filled, was covered with Peruvian guano, in order to make the article look as like genuine guano as possible.

What is Chilian Guano, and why is this name given to it instead of the better known Peruvian Guano? The only genuine Peruvian guano in this country comes thro' the hands of Barreda Brothers, and has their mark upon it; so that it would not be easy to sell a spurious Peruvian guano. Chilian guano is subject to no such regulations, and the books describe it, when "fine,"—and the manufactured article is made fine by grinding—as a "very valuable variety, equal to that of the very best Peruvian." The name, therefore, has been chosen with consummate cunning.

We have now presented the facts in regard to this Chilian guano manufacture. so far as we have been able to obtain them. Our readers can draw their own inferences. Even was the article itself valuable, it would be a gross deception to palm it off as genuine guano; but the article is comparatively worthless, as our analysis fully proves. Thus a ton of it contains 490 lbs. insoluble phosphate of lime, which at two cents per lb.—a high estimate—is $9.80; 124 lbs. of salt, worth say $1; 190 lbs. plaster, 50 cents, and 21 lbs. ammonia at 12 cents per lb, $2 52. This is $13 82 per ton. Allowing that the non-azotized organic matter, and carbonate of lime is worth $1.18, we have fifteen dollars as the outside value of a ton of the so called "Chilian guano." And for this the farmers are asked $40, and are told that it is better than Peruvian guano!

Since writing the above, we have received the May number of the American Farmer, containing the report of the Inspector of guano at Baltimore, Md. He says, "two lots, consisting of 100 bags each, were consigned from New-York and Boston, purporting to be 'Chilian Guano,' and so marked. An average sample of that from New-York contained ammonia 1 78 per cent and bone phosphate of lime 21.10 per cent. That from Boston contained 2.56 per cent ammonia, and 21.10 phosphate of lime." This is a little more ammonia than we found, and a little less phosphate of lime. The analyses show, however, that the article is comparatively worthless, even taking the highest figures.

THE HESSIAN FLY.

We hear complaints from the western parts of the Province of the ravages of the "Fly", but from the imperfect notices in the local press it is difficult to determine the extent, or even the nature of the attacks complained of. We presume the fly spoken of is the HESSIAN FLY, so long the dread of wheat-growers in the United States. Five or six years ago the Hessian Fly appeared in this vicinity, and did considerable injury. But the last few seasons we have not observed it in the field, nor heard complaints of its ravages. We see it stated in a Hamilton paper, that in some parts of the Niagara District, the wheat is pronounced not worth harvesting. We hope these accounts are exaggerated, and from the very slight notice taken of the matter by our correspondents, we are inclined to think the extent of the calamity has been over estimated. We hope some of our readers, in those neighbourhoods that have suffered, will give us some specific statements for our next number.

The Hessian Fly is well known in the United States, and is supposed to have been introduced into that country by the Hessian troops at the time of the Revolution. It may be interesting to many of our readers to learn something of its history, and we therefore present the following, collected from good authorities:—

This insect is one of the most formidable enemies of the wheat crop, with which the farmers of the United States, and, as it now appears, of Canada also, have to contend. It is a small gnat or midge, which naturalists have placed in the family of gall. gnats. *(Cecidomyiadæ.)* Mr. Harris' *Report on Destructive Insects*, and Herrick's valuable paper, published in *Silliman's American Journal of Science*, vol. 42, furnish the most reliable statements in regard to the character and habits of this insect. So far back as 1797, Dr. Isaac Chapman, of Philadelphia, published a history of its transformations which substantially agree with later observation.

"The head and thorax of this fly are black. The hind-body is tawney, and covered with fine grayish hairs. The wings are blackish, but are more or less tinged with yellow at the base, where also they are very narrow: they are fringed with short hairs, and are rounded at the end. The body measures about one-tenth of an inch in length, and the wings expand one quarter of an inch, or more. Two broods or generations are brought to maturity in the course of a year, and the flies appear in the spring and autumn, but rather earlier in the Southern and Middle States than in New England. The transformations of some in each brood appear to be retarded beyond the usual time, as is found to be the case with many other insects; so that the life of these individuals, from the egg to the winged state, extends to a year or more in length, whereby the continuation of the species in after years is made more sure. It has frequently been asserted that the flies lay their eggs on the grain in the ear; but whether this be true or not, it is certain that they do lay their eggs on the young plants, and long before the grain is ripe; for many persons have witnessed and testified to this fact. In the New England States, winter wheat, as it is called, is usually sown about the 1st of September. Towards the end of this month, and in October, when the grain has sprouted, and begins to show a leaf or two, the flies appear in the fields, and, having paired, begin to lay their eggs, in which business they are occupied for several weeks. The following interesting account of the manner in which this is done, was written by Mr. Edward Tilgham, of Queen Ann county, Maryland, and was published in the eighth volume of the *Cultivator*, in May, 1841. 'By the second week of October, the first sown wheat being well up, and having generally put forth its second and third blades, I resorted to my field in a fine warm forenoon, to endeavour to satisfy myself, by ocular demonstration, whether the fly did deposit the eggs on the blades of the growing plant. Selecting a favourable spot to make my observation, I placed myself in a reclining position in a furrow, and had been on the watch but a minute or two, before I discovered a number of small black flies alighting and sitting on the wheat plants around me, and presently one settled on the ridged surface of a blade of a plant completely within my reach and distinct observation. She immediately began depositing her eggs in the longitudinal cavity between the little ridges of the blade. I could distinctly see the eggs ejected from a kind of tube or sting. After she had deposited eight or ten eggs, I easily caught her upon the blade, and wrapped her up in a piece of paper. I then proceeded to take up the plant with as much as I conveniently could of the circumjacent earth, and wrapped it all securely in a piece of paper. After that I continued my observations on the flies, caught several similarly occupied, and could see the eggs uniformly placed in the longitudinal cavities of the blades of the wheat; their appearance being that of minute reddish specks. My own mind being thus completely and fully satisfied as to the mode in which the egg was deposited, I proceeded directly to my dwelling, and put the plant with the eggs upon it in a large glass tumbler, adding a little water to the earth and secured the vessel by covering it with paper, so that no insect could get access to the interior. The paper was sufficiently perforated with pin holes for the admission of air. The tumbler with its contents was daily watched by myself to discover the hatching of the eggs. About the middle of the fifteenth day from the deposit of the eggs, I was so fortunate as to discover a very small maggot or worm, of a reddish cast, making its way with considerable activity down the blade, and saw it till it disappeared between the blade and stem of the plant. This I have no doubt, was the produce of one of the eggs, and would, I presume, have hatched much sooner, had the plant remained in the field. It was my intention to have carried on the experiment, by endeavouring to hatch out the insect from the flax-seed state into the perfect fly again; but being called from home, the plant was suffered to perish. The fly that I caught on the blade of the wheat, as above stated I enclosed in a letter to Mr. John S. Skinner, the editor of the *American Farmer*, of Baltimore, who pronounced it to be a genuine Hessian fly, and identical in appearance with others recently received from Virginia.'

"Dr. Chapman agrees with the writer, in saying that the Hessian fly lays her eggs in the small creases of the young leaves of the wheat. 'The number on a single leaf,' says Mr. Herrick, 'is often twenty or thirty, and sometimes much greater. In these cases many of the larvæ must perish. The egg is about a fiftieth of an inch in diameter, cylindrical, translucent, and of a pale red colour.' Mr. Tilghman was correct in supposing that the eggs would hatch in less than fifteen days, under favourable circumstances; for, if the weather be warm, they commonly hatch in four days after they are laid. The maggots when they first come out of the shells, are of a pale red colour. Forthwith they crawl down the leaf, and work their way between it and the main stalk, passing downwards till they come to a joint, just above which they remain, a little below the surface of the ground, with the head towards the root of the plant. Having thus fixed themselves upon the stalk, they become stationary, and never move from the place till their transformations are completed. They do not eat the stalk, neither do they penetrate within it, as some persons have supposed, but they lie lengthwise upon its surface, covered by the lower part of the leaves, and are nourished wholly by the sap, which they appear to take by suction. They soon lose their reddish colour, turn pale, and will be found to be clouded with whitish spots; and through their transparent skins a greenish stripe may be seen in the middle of their bodies. As they increase in size, and grow plump and firm, they become imbedded in the side of the stem, by the pressure of their bodies upon the growing plant. One maggot thus placed seldom destroys a plant; but two or three are fixed in this manner around the stem, they weaken and impoverish the plant, and cause it to fall down, or to wither and die. They usually come to their full size in five or six weeks, and then measure about three-twentieths of an inch in length. Their skin now gradually hardens, becomes brownish, and soon changes to a bright chestnut colour.

This change usually happens about the first of December, when the insect may be said to enter on the pupa state, for after this time it takes no more nourishment. Mr. Herrick informs me, that the brown and leathery skin, within which the maggot has changed to a pupa or chrysalis, is long, egg-shape, smooth, and marked with eleven tranverse lines, and measures one-eighth of an inch in length. In this form it has been commonly likened to a flax seed. It appears, then, from the remarks of Dr. Chapman, Mr Herrick, and other careful observers, that the maggots of the Hessian fly do not cast off their skins in order to become pupæ, wherein they differ from the larvæ of most other gnats, and agree with those of common flies; neither do they spin cocoons, as some of the Cecidomyians are supposed to do. Mr. Herrick, in one of his letters, observes that, the pupa gradually cleaves from the dried skin of the larva, and in the course of two or three weeks, is wholly detached' from it. Still enclosed within this skin, which thus becomes a kind of cocoon or shell for the pupa, it remains throughout the winter, safely lodged in its bed on the side of the stem, near the root of the plant, and protected from the cold by the dead leaves. Towards the end of April and in the former part of May, or as soon as the weather becomes warm enough in the spring, the insects are transformed into flies. They make their escape from their winter-quarters by breaking through one end of their shells and the remains of the larves around them.

"Very soon after the flies come forth in the spring, they are prepared to lay their eggs on the leaves of the wheat sown in the autumn before, and also on the spring-sown wheat, that begins at this time to appear above the surface of the ground They continue to come forth and lay their eggs for the space of three weeks, after which they entirely disappear from the fields. The maggots hatched from these eggs pass along the stems of the wheat, nearly to the roots, become stationary, and turn to pupæ in June and July. In this state they are found at the time of harvest, and when the grain is gathered, they remain in the stubble in the fields. To this however, as Mr. Haven, remarks, there are some exceptions; for a few of the insects do not pass so far down the side of the stems as to be out of the way of the sickle when the grain is reaped, and consequently will be gathered and carried away with the straw. Most of them are transformed to flies in the autumn, but others remain unchanged in the stubble or straw till the next spring Hereby, says Mr. Havens, 'it appears evident that they may be removed from their natural situation in the field, and be kept alive long enough to be carried across the Atlantic from which circumstances it is possible that they might have been imported, in straw from a foreign country In the winged state, these flies, or more properly gnats, are very active, and, though very small and seemingly feeble, are able to fly to a considerable distance in search of fields of young grain. Their principal migrations take place in August and September in the Middle States where they undergo their final transformations earlier than in New England. There, too, they sometimes take wing in immense swarms, and, being probably aided by the wind, are stopped in their course either by mountains or rivers. On their first appearance in Pennsylvania, they were seen to pass the Deleware like a cloud. Being attracted by light, they have been known, during the wheat harvest, to enter houses in the evening in such numbers as seriously to annoy the inhabitants.

"Various means have been recommended for preventing or lessening the ravages of the Hessian fly; but they have hitherto failed, either because they have not been adapted to the end in view, or because they have not been universally adopted; and it appears doubtful whether any of them will ever entirely exterminate the insect. It is stated in the before-mentioned report to 'the Philosophical Society,' that Miss Morris advises obtaining 'fresh seed from localities in which the fly has not made its appearance' and that 'by this means the crop of the following year will be uninjured; but in order to avoid the introduction of straggling insects of the kind from adjacent fields, it is requisite that a whole neighbourhood should persevere in this precaution for two or more years in succession'" (*Harris.*)

It seems to be generally admitted that the variety of wheat called *Mediterranean*, introduced a few years since into the United States, where it is now extensively cultivated, resists the attacks of the Hessian fly. Hence it may be sown very early in the fall, long before it would be safe to sow the common varieties, by which another great advantage is gained, in its escaping the rust and mildew so apt to affect crops which are backward in the time of ripening.

SHEEP HUSBANDRY—No. III.

COTSWOLD SHEEP.

The following account of this breed is by Mr. Spooner:—

"This is an ancient and celebrated breed, its wool being spoken of very favorably by many old writers Cotswold signifies a sheep-fold and a naked hill. The Cotswold hills, the native tract of the breed, are of moderate elevation, possess a sweet herbage, and though formerly consisting mostly of bleak wastes, have been latterly much improved. Camden speaks of the breed as having fine and soft wool. Drayton writes of its fleeces as more abundant than those of Sarum and Leominster. Speed writing 200 years ago, speaks of the wool as similar to the Ryeland, and rivaling that of Spain. Indeed, some imagine it was the origin of the merino sheep, as in 1464 Edward IV, permitted a number to be exported to Spain, where they greatly increased and spread. Spain, however, before this, was celebrated for the fineness of its wool. Markham, in the time of Queen Elizabeth, speaks of Cotswold as having long wool, and Mr. Marshall and other writers consider that they have always been a long-wooled breed. It is difficult to reconcile these differences of opinion; for my own part, I am disposed to think that the present are the descendants of the old race; be this as it may, we have no evidence, either oral, written, or traditional, of the change having been made.

The Cotswold is a large breed of sheep, with a long and abundant fleece, and the ewes are very prolific and good nurses. Formerly these bred only on the hills, and fatted in the valleys of the Severn and the Thames; but with the enclosure of the Cotswold hills, and the improvement of their cultivation, they have been reared and fattened in the same district. They have been extensively crossed with the Leicester sheep, by which their size and fleece have been somewhat diminished, but their carcasses considerably improved, and their maturity rendered earlier. The wethers are now sometimes fattened at fourteen months, when they weigh from 15lbs. to 24lbs, per quarter, and at two years old, increase to 20lbs. to 30lbs. The wool is strong, mellow, and of good color, though rather coarse, six to eight inches in length,

and from 7 to 8lbs. the fleece. The superior hardihood of the improved Cotswold over the Leicester, and their adaptation to common treatment, together with the prolific nature of the ewes and their abundance of milk, have rendered them in many places rivals of the new Leicester, and have obtained for them of late years more attention to their selection and general treatment, under which management still further improvements appears very probable. They have also been used in crossing other breeds, and have been mixed with the Hampshire Down. It is, indeed, the improved Cotswold that, under the term New or Improved Oxfordshire sheep, are so frequently the successful candidates for prizes offered for the best long-wooled sheep at some of the principal agricultural meetings or shows in the kingdom. The quality of the mutton is considered superior to that of the Leicester, the tallow being less abundant, with a larger development of muscle or flesh. We may, therefore, regard this breed as one of established reputation, and extending itself throughout every district of the kingdom."

—

MERINO SHEEP IN ENGLAND.

George the III, was distinguished as an ardent promoter of agriculture, and determined in 1787, to make a fair trial of this renowned breed; and accordingly a few were ordered and placed on his farm at Kew. They were selected in Estremadura, on the borders of Portugal; and this, at that time was a sort of smuggling transaction, as no Merinos could be sent from any Spanish port without a license from the king; therefore they were obliged to be shipped from Lisbon. The sheep were hastily chosen from among different flocks and various districts, and consequently exhibited but little uniformity, and not fully the true character of the breed; the king therefore, soon disposed of them to others.

Subsequently, it was determined to make a direct application to the Spanish monarch for permission to make a selection from some of the best flocks This was promptly granted; and a small number was taken from the Negrette variety, then deemed the most valuable of the migratory sheep. This flock arrived in 1791, and was immediately placed on the king's farm.

From ignorance, they were at first badly managed. Having been placed on a moist and luxuriant soil, many soon became affected with foot rot, and others died from attacks of liver rot. This calamity was a triumph to the prejudiced, but a change to dryer pasture proved a remedy, which soon led to a change of opinion in their favor. In a short time it appeared that they were no more subject to disease than British sheep.

Crosses took place with several varieties of the native breeds, with various success. Dr. Parry crossed with the Ryeland, the most superior short-wooled sheep in England, and the fourth cross produced a wool equal to pure Merino.

Mr. Coke, the renowned English agriculturist, also experimented on both the Ryelands and South Downs, and affirmed that the cross with the latter was superior to that of the former. It was but a few years afterwards, that he expressed the following opinion, in an address before the Merino Society, Holkham:—"I feel it my duty," said he, "to state my latest opinion of the effects of the cross of a part of my South Down flock with Merino tups, and I wish it could be more favorable. From the further trial which I have made, (this the fourth year,) I must candidly confess that I have reason to believe that, however one cross may answer a farther progress will not prove advantageous to the breeder." This opinion of Mr. Coke should be duly considered by every American breeder.

But, sometime antecedent to this decision of Mr. Coke, very many who had entertained apparently insurmountable prejudices were bold to acknowledge the merits of the Merinos, and became fully satisfied that neither the climate nor herbage of their new home were incompatible with perfect success. Sir Joseph Banks and Lord Somerville were amongst their staunchest and zealous advocates, and the latter duly tested the sincerity of his opinions, by importing a considerable flock of them.

Thirteen years after the king's importation of the Negrette flock, a public sale by auction was made of Merinos. The rams averaged about fifty dollars per head, and the ewes thirty. In 1808, four years after the price averaged 130 dollars for rams, and 100 dollars for ewes In 1810 the Merinos arrived at the climax of public favor. In this year, at another public auction sale, rams commanded nearly 300 dollars per head. "One full-mouthed Negrette was sold for over 800 dollars, and another for nearly 700."

A Merino Society was instituted in the following year, at the head of which was placed Sir Joseph Banks, with fifty-four Vice Presidents, and local committees were established in every county in England, Scotland, Ireland, and Wales.

Mr. Youatt observes—"No more striking instance can be produced of the fallacy of human expectations and judgment, than the establishment of this society. From this period is to be dated the rapid decay of the Merinos in public estimation." After a passing tribute of just praise to the breed, he proceeds to say, "In Great Britain, nevertheless, where the system of artificial feeding is carried to such great perfection—where the sheep is so early and so profitably brought to the market—that breed, however it may ultimately increase the value of the wool, can never be adopted, which is deficient, as the Merinos undeniably are, in the principle of early maturity, and general propensity to fatten."

Other reasons for the abandonment of the Merinos are given by Mr. Plint, a distinguished agriculturist. He says—"I always thought the speculation of cultivating the Merinos a decidedly foolish and unprofitable one. We can consume all the coarse, wool we grow, and more if we could get it; and taking carcase and weight of wool together, the long wooled sheep is more profitable by far than the Merino. Besides, if the English breeds were to any considerable extent superseded by the Merinos, the price of that wool would fall, and long wools would rise; and the advantage of growing fine wool, on account of its high price, would slip through the fingers of the agriculturist. If we could grow more of both kinds, well and good; but in present circumstances, a profit by foreign wool is as good as a profit by fine wool, and we can only have one; and it is the part of wisdom to take that which is easiest got."

The above are the substantial reasons for the downfall of the Merinos in great Britain, and not altogether, as many have supposed, *from the humidity of the climate*. Long after their introduction, the wool of the Merinos was carefully compared with the best samples of pure Spanish, and no deterioration was perceptible. A dry climate is best suited to the Merino, but many years would elapse before a humid one, without other causes, would produce any essential change in the properties of its fleeces. High feeding is altogether a more potent cause of deterioration.

POTATOES AND THEIR CULTURE.

Say what people will of the value of the potato as an article of food—of the cost of the nutriment it furnishes, so small in amount when compared with many other vegetable products—it is a fixed fact that it is an indispensable article for the table—a dish missed if absent, whatever else may attempt to take its place. So, too, most people who have land for the purpose, grow them at least for home use, and of late years the demand has ever been such as to make Potatoes a profitable crop to the general farmer. The rot has prevailed more or less, almost everywhere, but for the last three years not to any great extent or fatality We do not propose to offer any theory, or solution of its causes, but merely remark on the culture of the "tuber."

The best soil for the Potato is a rich sandy loam, but any well drained soil will answer. A stiff tenacious clay or a very light sand, however, should not be chosen, when any other can be had. About the best potatoes, both for quality and quantity, have been raised on sward land, plowed for the first time, and hence rich and unworn, well worked and planted in good season. Many farmers are in the habit of selecting such a spot when it can be had, and thus secure not only a good crop of potatoes, but fit their land in the best possible manner for after cultivation Those who have only old land should select a field well exposed to the sun, made rich by manures formerly given or by well-rotted compost, now applied. Unfermented manures are very apt to injure the quality of the product. We have seen very good potatoes grown on a mucky soil, and should think muck a valuable application to uplands designed for this crop. Indeed, we know it to be so from actual experiment.

Deep and thorough tillage is essential to the success of the Potato crop. A good course would be to plow green sward in the fall, deeply and neatly, cross-plow in the spring, but so as not to disturb the inverted sod, and then harrow thoroughly—if it is thought best to plant in hills—before marking out. The planting may be done with the plow, more rapidly, and nearly as well as with the hoe. but only in drills, or with rows but one way. Turn a light furrow, then drop the potatoes if in drills—as is best for this method—about ten or twelve inches apart, then turn another furrow upon them, covering from two to three inches deep. Sometimes the whole surface is plowed over at this time, potatoes being dropped only so as to have the rows about four feet apart.

Potatoes should be hoed and dressed in the early stages of their growth. As soon as they appear above ground run the cultivator through, following with the hoe, but not making much of a hill, as, indeed such are not needed at any time, on a suitably dry soil.—Flat culture is very generally preferred by those who have tried it. Give them as a top-dressing a small handful of ashes or lime, and after the second hoeing, one of plaster The last named fertilizer has been found very beneficial and should not be omitted. Keep the ground mellow and free from weeds; the potatoes will grow more rapidly, and the vines soon so cover the surface that no further care will be needed.

Every neighborhood has its choice varieties, most kinds succeeding better in one place than in another, and hence there preferred. Our recommendation in the matter would have no greater weight than many another man's, so we do not need to name our favorites here. Of one thing we are quite sure, and that is, that the "bug" has something to do with the very choice and costly varieties, sometimes cried up so highly Plant what you like—take good care of them,, enjoy them when they are produced, and if you have a surplus be satisfied with a reasonable price for it.—*R. N. Yorker*

CASHMERE WOOL.—The *Rural New Yorker* says We are indebted to Mr. Richard Peters, of Atlanta, Georgia, for a sample of Cashmere wool, similar to that described in the following paragraph from the Washington Union. We were shown at the Agricultural Bureau a sample of the wool of the Angors or Cashmere goat, sent to the patent office by Mr. Richard Peters, of Georgia. This specimen was taken from the progeny of one of the animals imported from Persia by Mr. James B. Davis, of Columbia, S. C., in 1849. This wool is about ten or eleven inches in length, of a fine silky texture and pure whiteness.—The clip of wool to each animal in this country is from four to four and a half pounds—being a somewhat larger yield than that of Persia. The experiment thus far has proved highly satisfactory, as the entire flock has increased from seven females and two males to upwards of fifty; but, unfortunately, the births in most instances have been males. They breed annually, and usualy give two kids at one birth Mr. Peters has recently purchased the entire stock; and Mr. Davis is on the point of embarking for Asia, with the object of importing more.

THE HAYFIELD.

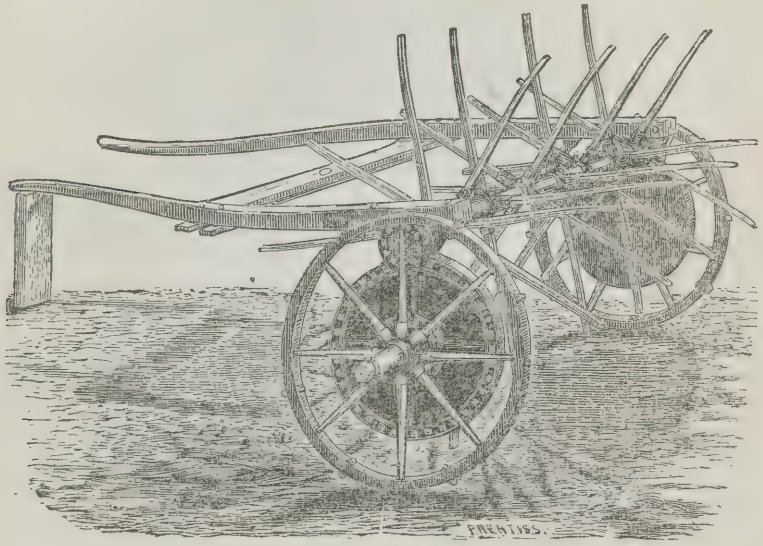
The high price of hay during the past season is a pretty conclusive proof that this important crop has been too much neglected by farmers generally. We fear the continuance of the war in Europe, and the consequent high prices of grain, will increase the evil already of sufficient magnitude. With wheat at *two dollars and a quarter* per bushel, it is perhaps useless to warn the Canadian farmer against the "bad practice" of growing *too much* wheat. Nevertheless we venture to suggest, that wheat after wheat, and wheat after oats, with but a scanty application of manure,—a "rotation" too often practised in this country - is neither *good* nor *profitable* farming.

The Hay crop in this neighborhood will be very light this season. The absence of rain during the latter part of April and beginning of May, kept back the early growth, and it has never fully recovered. We learn from other parts of the Province that much less than an average crop may be looked for. We may, therefore, expect to see hay commanding a high price for another season. Those who grow it should be careful to make it go as far as possible. A ton of *good* hay is worth two tons of poor hay, and three of *bad* hay. It may not *last* as long, but it will go further towards building up the animal,—in supplying the material for muscle and fat.

In the common mode of cutting grass and making hay, much of the nutritive property is lost. A common evil is that of cutting *too late*. The proper time is when the plant is in *full flower*. At this time the nutricious juices are more abundant, and diffu-

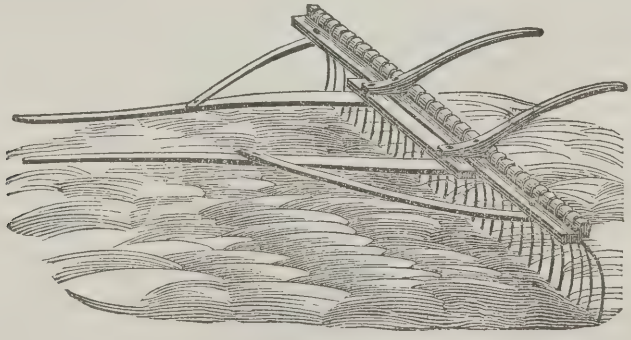
ed throughout the plant. It is well known that the saccharine juices of a plant disappear in the process of ripening its seed, and this should, therefore, never be permitted in grass intended for hay. Another cause of serious injury to the quality and value of the hay, is imperfect curing. Exposure to rains, heavy dews and a burning sun is capable of making hay of less value than good straw. But this is an evil that every farmer understands and will, we doubt not, in view of scarcity and high price, endeavour, this year, to avoid.

The introduction of machinery into the hayfield, has been productive of much saving in the *value* of the crop as well as of manual labor. We gave last month an engraving of a *Mowing Machine*, an implement which is coming into very general use. These machines leave the grass so evenly spread that, when not unusually heavy, it requires little or no spreading or shaking. We give below a cut of a new spreading or *tedding* machine, which is said to answer a good purpose where the grass is heavy and requires to be shaken up.



HAY-MAKER.

The above machine is evidently a modification of Smith's (English) tedding-machine, but of simpler construction, and probably quite as efficient. It is made by Messrs. Ruggles, Nourse, Mason & Co., of Boston, and can be ordered through McIntosh and Walton, of this city. We are not able to state the price as we do not find it in their catalogue. By using the Mower, and Hay-maker, grass can frequently be cut in the morning and taken to the barn in the evening.



HORSE-RAKE.

The spring or coil tooth Rake, when *well made*, is the best for rough land. But the common revolving rake, which is now pretty generally introduced into the older townships, is well suited for smooth meadows. No farmer whose fields are in a tolerable condition should be without the horse-rake.

HORSE-POWER FORK.

The above cut represents another "improvement" that has been found useful on large farms. Pitching hay, as we know by experience in our younger days, is not easy work. By a litle ingenuity and trifling expense this severe operation may be rendered almost a pleasant pastime Besides the unloading may be expedited, often an important consideration in haying time.

The cut sufficiently explains the mode of applying the horse-power. The fork is, of course, made strong, the *head* being about 2½ feet long and 2½ inches square The handle is about 5 feet, well mortised and secured by straps of iron. The prongs, 4 in number, are of steel, about 20 inches long A rope extends from each end of the head to a ring on the handle 2½ feet from the head. A single rope connects with these and passes over a pully in the rafter as seen in the cut. A rope on the end of the handle is in the hands of the man on the load, and when the fork full is drawn up to the proper height, and by the person in the mow swung to the proper spot it is allowed to drop, and is more compact without treading than with it when pitched in the common way. Six tons an hour have been pitched 20 feet high with this fork and by changing hands in a hurry, twice that quantity may be unloaded.

Hay for Cows in Summer.—An observing, intelligent and successful farmer informs us that he is in the practice of feeding his Cows with hay in summer, particularly if the season is such as to afford flush pastures. His reason is that a full, rapid and vigorous growth of grass gives to cattle that feed upon it, a desire for something to absorb the excess of the juice in their food. Dry hay they devour greedily, and though in ever so small quantities, evidently with the most beneficial effects. Every farmer must have observed that in dry seasons, horses, cattle and sheep keep in good condition upon herbage parched and apparently scant. while in wet seasons. in all pastures, though always full, the process of fattening with them was slow. Dry fodder in such cases is required to give substance and tenacity to the green, and can be profitably used by feeding it to horses and cattle.—*Newburgh Telegraph.*

Hilling Corn.—Hilling corn is an attempt substitute for deep plowing. If corn land is plowed deep, there is no need of hilling. The roots will strike down instead of stopping at a hard pan, and waiting for mellow earth, in the form of hilling, to be put over them. By deep plowing you give the roots a chance to go down, and they will go as deep as nature requires without having the earth piled over them Never disturb the roots by plowing after the tenth of July. If weeds, or grass are getting up, cut them off. but it is better to "let the wheat and tares grow together, lest while ye dig up the tares, ye pluck up also the corn with them."—*Ex.*

Cheese Making.—A few months ago, I visited a lady friend in the country; her table was continually supplied with most delicious cheese. of her own making. I asked, as a particular favor, that she would communicate to me her peculiar method of making it, and wherein she differed from others. She replied that she followed the method she had been taught generally. prepared the rennet in the same way, but felt sure that she had discovered the reason why cheeses were strong, both to taste and smell, which consists in the single circumstance of putting the curd to press warm. She did not use any artificial means to cool the curd, but after he had been chopped and scalded, allowed it to remain spread upon the cloth until it was cool as the surrounding atmosphere, and thus put it to press.

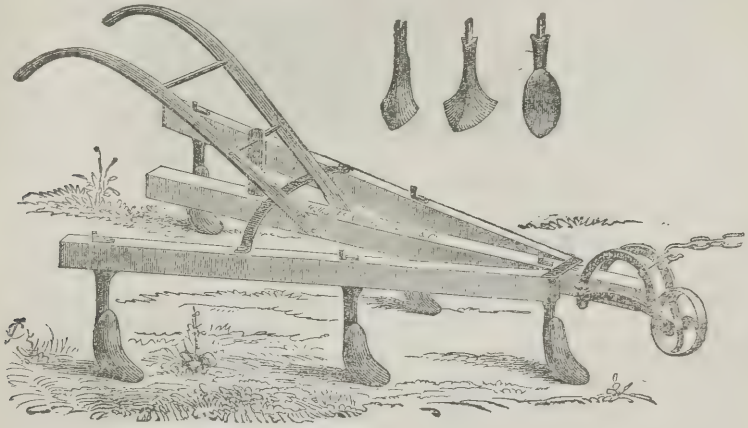
There is a great deal of probability in the above statement, for I have frequently noticed that some cheeses from the same dairy would be strong and offensive, and others mild and agreeable, which may be owing to the circumstances of the dairy woman getting her cheese to press early some days, and being hindred others, until the curd had time to cool. It may be well for dairy women to try the experiment so as to ascertain the fact.—*N. E. Farmer.*

At a late meeting of the Ohio State Board of Agriculture, composed of some of the most intelligent farmers of that state, a committee was appointed to examine the hedges entered for premium, which resulted in the most unanimous award to Mr. McGrew for the most perfect hedge in the State.

CULTIVATORS.

The use of the CULTIVATOR is becoming very general among good farmers, and it is found to be a labour-saving machine. The large wheel-cultivator seems to be preferred, but there are several other kinds of lighter and of cheaper construction that are coming into favour.

The following is a common variety, and from its low price is likely to retain the good opinion of those who use it:—



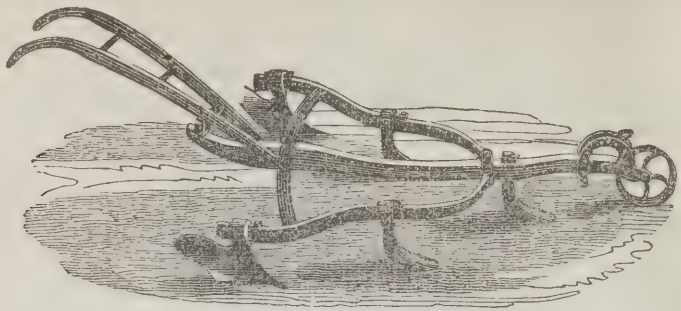
EXPANDING AND REVERSABLE TOOTH CULTIVATOR.

The teeth are sometimes made of cast iron, but as in other kinds, they may be part or all steel. They are sold at from $5 to $7 when the points or shares are made of steel. They can be reversed and are very durable. Different kinds of teeth are adapted to the same mortice.

PARALLEL EXPANDING CULTIVATOR.

The Parallel Expanding Cultivator is a recent invention by Ruggles, Nourse & Mason, of Boston. The teeth stand in the same relative position whether the frame is expanded or contracted, and always work in a direct line forward. Both steel and cast iron shares are made to fit the teeth. These shares being fastened to the upright standard by bolts and nuts, may be shifted to use steel or iron ones at pleasure, or new ones may be substituted for those worn out,—an economical arrangement as this part of the tooth is subject to the greatest wear, and is used up long before the remaining portion begins to fail. The teeth have high standards which elevate the frame-work so far from the ground as to prevent the instrument from clogging with sods, &c.

The price ranges from $4½ to $6.



UNIVERSAL CULTIVATOR.

This is an excellent implement. It is made long and all of iron except the centre beam and handles; the side beams, of wrought iron, are so curved, that as they are expanded or contracted, each tooth, by loosening the iron key which confines it in its place, may be moved forward or back to a point that will again cause it to work parallel with the centre beam, and at proper distance from the others. To the beams are fitted several sets of different formed teeth and scarifiers, of wrought and cast iron, and one or more sets are supplied to order.

There is also one pair of teeth calculated to work in the rear, represented by the Figure, which may be used instead of the common teeth; they are in form like small ploughs, turning the furrows in opposite directions, and fitting alike both sidebeams; they may be placed to turn the furrows to or from the centre or rows of vegetables. If the forward teeth are used at the same time, they finely pulverize the soil, and if the ploughs are set to turn inwardly, a beautiful light bed is formed in which to plant any kind of seeds. The farmer or planter using this cultivator can have any form of wrought teeth he may desire, attached to the frame, by his blacksmith, as the manner of fitting them to the beams is very simple and easy.

The price of this sort ranges from $9 to $12. All these are drawn by horses or oxen, but they are guided and the depth is regulated, in part, by hand.

We believe either of these implements may be had of McIntosh & Walton, of this City.

CULTIVATION OF MILLET.

Eds. Rural :—In your paper of April 7th, I have read an article under the head of "*Cultivation of Millet*," which, without an explanation, might lead some of your readers to embark in the cultivation of a crop in which they may be dissappointed. There are the three species of *Panicum* cultivated as millet besides two or three species of the *Sorghum* under the same common name.

Two of these species, *Panicum Germanicum* and *Panicum Italicum*, have round heads, much resembling what farmers know as pigeon grass. I have cultivated these two varieties in Western New York, but have not found them profitable. The common or German millet grows with a stalk four or five feet high, as large as a wheat straw and coarser as feed for stock. The *Panicum miliacum* grows about three feet high, with a broad leaf at each joint, the stalk terminating in a panicle, somewhat like a panicle of Poland oats. There are two varieties of this species, one having brown and the other yellow buds. This species is found to be more profitable for cultivation than the two first named. From the small size of the stalk and the great proportion of leaves, cattle and horses seem more fond of the straw of this species than they are of the best timothy hay.

An acquaintance of mine, summer before last, raised an acre, from which he harvested and threshed thirty bushels of seed, and the straw he considered equal to three tons of timothy hay. I conversed with a farmer the past week, who raised it the last summer, who said his crop was considerably injured by the drought, yet he considered it the most profitable crop he raised upon his farm, as both his cattle and horses were more fond of it than they were of his best hay.

From the above, you perceive that the profit of the cultivation of this crop depends upon the species cultivated.—*Cor. Rural New Yorker.*

Scours in Cattle.—This disease generally arises from too much milk being obtained from the cow—sometimes from some deleterious quality of the milk of the mother.

If occasioned by the first cause, change, by not allowing it to have much at first, but give it some caraway, cinnamon, or ginger tea, combined with some gentle astringent, such as a decoction of blackberry twigs, blackberry root, oak or hemlock bark. If the quality of the milk is the cause, change the food of the mother. If the calf is weaned, or is fed by hand, boil the milk a little, and combine it with common black tea, and also cinnamon, ginger or carraway seed. If the discharges are fetid, there is probably some inflammation, and danger of gangrene. Pulverized charcoal, or yeast, would be useful, if mingled with the tea—*Maine Farmer.*

SHORT-HORN CATTLE.

There has been of late in this country no inconsiderable amount of prejudice and misconception evinced on the difficult, yet most important question of the relative merits and value of the different breeds of cattle. We have no great sympathy with the mere partisan, who is always disposed to overlook the imperfections of his own favorite stock, and to magnify those of others. The mere abstract question, which is, *per se*, the best breed, apart from all considerations of climate, pasturage, markets &c., carries on the face of it, as we think, a palpable absurdity. The great variety of which the ox tribe is susceptible, either by nature or art, proves to demonstration that this portion of the animal kingdom, through the varieties of breeds, is wisely and beneficially adapted to the varying circumstances of nature and man. As a general rule, the small and swift animal of the mountain would not find a genial home by being transferrred to the warm and luxuriant plain; nor on the contrary, would the heavy and fast-growing denizen of the valley, have his characteristic points and qualities developed by exposure to the bleakness and scanty herbage of more elevated regions. Hence the importance of adapting the animal to the conditions of external nature.

Within the last half century an extraordinary amount of labor and capital has been expended, particularly in Great Britain, in improving the different races of domesticated animals, with a view of obtaining a few prominent breeds, which should be well adapted to ordinary circumstances. Among neat-cattle the improved Durham has been sufficiently proved to stand in the foremost rank, for the general purposes of an advancing husbandry. No disparagement is hereby meant to be made of any other breeds, such as Devons, Herefords, Galloways, &c., which are excellent and often profitable animals. But for general purposes, in a country of ordinary expanse and pasturage, when butchers' meat commands a good price, and early maturity is, therefore, a primary consideration, the modern Short-horn stands unrivalled. The high prices which this world-renowned breed command in all countries, where agricultural improvement is cherished, is a fact which clearly testifies the public appreciation of their worth. Several important sales of short-horns, lately made in England, indicate the great and general interest which is felt for this kind of stock, and some of the very choicest specimens of the best blood that England or Scotland can produce, have reached this side of the Atlantic. The simple fact that people continue to buy and sell this breed of stock at continually advancing prices, through long periods of time, sufficiently speaks for itself. As a specimen of what is doing at home in this way, we append an extract from a recent number of the *Scotsman* Newspaper.

Sales of Shorthorns.—During last week several sales of shorthorns took place in England. The most important of these was Mr Tanqueray's, Hendon, near London. As at previous sales of shorthorns America competed successfully, giving high prices for several of the first-class animals. Among these a two-year old heifer at the price of 480 guineas; a cow, five years old, 180 guineas; two two-year old heifers, one at 160 guineas and one at 140 guineas, one cow 90 guineas, &c. The highest priced cow, six years old, was purchased by an Englishman, Mr Gunter, at 500 guineas, who also purchased a year-old bull, at 200 guineas, The highest priced bull was purchased by Sir Charles Knightly at 280 guineas. One one-year-old bull calf was purchased for Australia for 200 guineas. The highest priced animal for Scotland was a two-year-old bull purchased by Mr Cruikshanks, Aberdeen, at 155 guineas. Several of the highest priced animals were purchased at Earl Ducie's sale in August 1853. The highest priced cow was then purchased at 250 guineas and now sold for 500 guineas. Another cow was purchased at 180, now sold at 480, guineas. The highest priced bull at Earl Ducie's sale was 650 guineas, and was expected to have been exposed at the present sale, but had died since the catalogue was published. Some animals of the same blood, descended from Charles Colling's herd "Duchess," and purchased at his sale by Mr Bates, have been sold, bulls at 1000 guineas and upwards (one also by Mr Bates, for America, at 2000 guineas.) One cow of this family was sold at Earl Ducie's sale for 700 guineas, and her calf at 350 guineas. The first of these was purchased for America, as were also the highest priced bulls. It is now seventy years since the progenitor of the improved shorthorns, "Hubback," first came into the hands of Mr Charles Collings, and was thought high priced at £8 when near a year old!

How much Manure do we Use on an Acre?—An acre of land contains 43,560 square feet, 4,840 square yards, or 160 square rods. By those who have used guano, it is said 300 pounds is sufficient to manure an acre; 302½ lbs. would just give one ounce avordupois to the square yard. One cubic yard would give a trifle over one inch to the square foot. A cubic yard of highly concentrated manure, like night soil, would, if evenly and properly spread, manure an acre very well. A cubic yard of long manure will weigh about 1,400 lbs.; a cubic foot not far from 50 lbs. A cord contains 128 cubic feet; a cord and a quarter would give about a cubic foot to the square rod. If liquid manure be used it would take 170 bbls. to give one gill to a square foot upon an acre, which would be equal to about 50 pipes or large hogsheads. It would be quite useful if farmers would be a little more specific as to the amount of manure applied.

THE MONTHS—JULY.

"The groves, the fields, the meadows, now no more
With melody resound. 'Tis silence all,
As if the lovely songsters, overwhelm'd
By bounteous nature's plenty, lay entranced
In drowsy lethargy."

This month, which was the commencement of the Celtic year, was called by our Saxon ancestors *Henmonath*, that is, *Foliage Month*, as at this time the denizens of the forest attain to the greatest luxuriance of their leafy covering. The name of July is from the Latin, Julius, an appellation given to the month by Mark Anthony, in honour of Julius Cæsar, whose nativity fell within its range.

There are few days of importance in this month connected with national or ancient observances that call for special remark. The "Dog-Days," according to our mode of reckoning, commence on the third of July and end on the eleventh of August. They derive their name from the annual phenomena of the conjunction of the Sun and Sirius, or the Dog-star, when they rise and set together, and continue to do so without much variation for several days. It is probable that many of the popular notions of the Dog-days had their origin in that ancient and interesting land, com rising the valley of the Nile. As the star came in conjunction with the sun about the time of the summer solstice, when that river began to rise, the ancient Egyptians imagined that it influenced in some mysterious way the overflowing of the waters, a circumstance, on which then, as well as now, the fertility of that country mainly depended. The Egyptians, therefore, had the most interesting associations connected with Sirius, and worshipped it as something holy. Other nations, however, held the occurrence in a different estimation, as the harbinger of intense heat and disease, and hence arose many popular superstitions, some of which have come down to the present day. We are told that the ancient Romans believed that at the rising of Sirius, the seas boil—wines, in the coolest places, ferment—standing waters are put in motion, and dogs beyond all question go mad. In more modern times the belief that the intense heat, characteristic of this season, proceeds from Sirius, must have been deeply rooted, since Gassendi gravely argued that as the Dog-star, which was the symbol of heat to us, was the symbol of cold to our antipodes, and therefore it followed that the heat came from the sun, and not from the star.

St. Swithin's Day occurs on the 15th of this month, and has long been retained in the popular memory as well as in the calendar, from a notion that if any amount of rain fall on this day, it will rain more or less for forty days in succession. This vulgar notion is not so absurd as at first sight it might appear to be, since it is at this period the solstice rains, in the climate of the British Islands, usually occur, which, when once they begin, are likely to continue for a considerable time. Hence the delay and difficulty so commonly experienced in securing the hay and grain harvests; inconveniences and losses of which we, in the drier and more regular climate of Canada, know practically but little.

The origin of the popular belief in the watery influences of St. Swithin, who was bishop of Winchester in the ninth century, may be traced to the following circumstance:—

The Bishop, it is said, often expressed a desire, that when he died he might be buried in the open church-yard, and not in the chancel of the minster, as was usual with other bishops, and his request was complied with: but the monks, on his being canonized, considering it disgraceful for the Saint to lie in a public cemetry, resolved to remove his body into the choir, which was to have been done with solemn procession on the 15th of July; it rained, however, so violently for forty days together at this season, that the design was abandoned.

The following description of the heavy summer rains, so common to this season, from the pen of Leigh Hunt, will not be thought out of place here:—

"The strong rains which sometimes come down in summertime, are a noble interruption to the drought and indolence of hot weather. They seem as if they had been collecting a supply of moisture equal to the want of it, and come, drenching the earth with a mighty draught of freshness. The rushing and the tree-bowing winds that precede them, the dignity with which they rise in the west, the gathering darkness of their approach, the silence before their descent, the washing amplitude of their out-pouring, the suddenness with which they appear to bear off, taking up, as it were, their watery feet to sail onward, and then the sunny smile again of nature, accompanied by the "sparkling noise" of birds, and those dripping diamonds of the rain-drops—there is grandeur and beauty in all this, which lend a glorious effect to each other; for though the sunshine appears more beautiful than grand, there is power, not ever to be looked upon, in the orb from which it flows; and though the storm is more

grand than beautiful, there is always beauty when there is so much beneficence."

July is usually the warmest month of the year, for although after midsummer the intensity of the direct solar heat begins of course to diminish, the reflected heat of the earth more than compensates for the loss. The increasing temperature rapidly brings the crops to maturity, and in these northern latitudes, whether in the Old World or the New, July may be considered as *the summer month.*

Hay-making, the most delightful of rural occupations, is now engrossing the attention of the farmer. It is carried on in the earlier climates of Britain, as has already been remarked, in the "very spring and play time of the year," when the fields, and meadows, and lanes are covered with a rich carpet of grass sprinkled with flowers, and the trees of the forest have put on their full livery of green. This, too, is applicable to Canada, as well as the following quotation from Bishop Mant's British Months:—

> "Here, as the swarthy mowers pass
> Slow through the tall and russet grass,
> In marshall'd rank from side to side,
> Before the scythes' wide sweeping sway
> The russet meadows' tall array
> Falls, and the bristly surface strows,
> With the brown swathe's successive rows"

Hay making is as healthful as it is delightful. The smell of the new-mown grass and flowers is refreshing to the senses, and the soft green sward is pleasant to walk on.

> "The grateful sweetness of the new-mown hay,
> Breathing refreshment, fans the toiling swain"

There is probably no rural occupation so much desired and enjoyed by the children and inhabitants of crowded cities as hay-making, an operation in which even ladies may healthfully engage, if they are not afraid of giving their fair skins a still finer tinge of the sunny, which when not carried to excess makes them no less beautiful. Allan Ramsay makes his lover become enamoured of the "Lass of Patie's Mill," while helping to make hay:—

> "A tedding of the hay,
> Bareheaded on the green,
> Love 'mid her locks did play,
> And wanton'd in her e'en."

Nothing (remarks Leigh Hunt) is more lovely than a female head uncovered out of doors. It looks nymph-like, and a part of the fertile landscape.

Theocritus has used it with exquisite grace and nature in a passage imitated by Virgil.—A goatherd and shepherd are boasting of their popularity with the village lasses:—

> *Comatus.*—There's Clearista, when my goats go by,
> Pelts apples, and then hums me something sly.
> *Lacon.*—And Cratis meets and maddens me; her hair
> Shakes at her throat in curls with such an air.

As to a seat against a haycock, on the side farthest from the sun, with the odour of the new-mown grass perfuming all the air, and a sense of slumberous beauty breathing from the warm sky above, and the green earth below,—it is a luxury which has still survived for the lover of the field; and we accordingly nestle to it in our fancy, and with half-shut eyes rest from our own pleasant work.

We have referred to hay-making simply in its poetical associations; as a rural art and pursuit it demands the care and closest attention of the husbandman. In this country it is shorn of a portion of its beauty and attractiveness by the scarcity of labourers, the frequent intensity of the sun's heat the very limited variety of our cultivated grasses, and the hurry and often slovenly manner in which the work is performed. The great point with our farmers is to get the grass collected together as soon as possible after mowing, and then into the barn. Hence every new and efficient mechanical appliance, by which this process can be facilitated and cheapened, is welcomed with delight. Mowing-machines are now getting into use in many places, and the horse rake is generally employed An improved hay-rake was shown us the other day, which appears to deserve the attention of farmers at this busy season. It is manufactured and patented by Mr. Wm. Niblock, near Brockville. The teeth are so adjusted as to adapt themselves to an uneven surface, and it is said that this rake does not roll the hay as the Revolvers usually do: and that a horse and boy can easily rake fifteen or twenty acres of meadow in a day, doing the work perfectly clean.

Although the grain harvest commences in Canada during this month, want of space obliges us to defer our reflections till August, which is emphatically the *harvest month.* Meanwhile it may not be amiss to remind our readers of the importance of attending to the ripening and timely securing o their crops, whether of hay or grain. The operation of cutting is too commonly deferred too long Grass should be mown when the plants are in bloom, and before they show any signs of forming seed. The nicest experiments and careful observations show that to secure the greatest quantity of nutritious matter, of the best quality, it should be cut immediately after it has passed through the milky state. For if allowed to stand longer, the

starch and sugar of the grass, or grain becomes gradually converted, by the ripening process, into woody fibre, a substance that posseses little nutriment for animals. In a country where labour is scarce and consequently high, and where the climate so rapidly forces the growth and ripening of the grain, it is of the utmost consequence that our farmers should undertake and practically obey the important law to which a brief reference has been made. By waiting too long, much of the grain becomes scattered and lost, thereby diminishing in quantity as well as deteriorating in quality.—*B.*

Horticulture.

THE APPLE-BORER.

I have suffered from the effects of the "Apple Borer," having lost some seventy beautiful trees during the space of three years. I made use of all the preventives suggested by others that I could get hold of, but all to no purpose. I came to the conclusion four years since that the tree must be protected by a covering in order to prevent the little animals from making a deposit. My process was this, and so far successful to the extent of the covering. Early in May, which is the proper time for this region, I examined every tree, and if nits or grubs were there, I followed them with a knife and removed them. I lifted the earth from the collar or base of the tree to the depth of two or three inches. and made use of worn wool bags, of little value, for wrappers, which, when cut into stripes, are very convenient. I commenced two inches below the surface and wound the extent of two feet, giving the tree two thicknesses of sacking, and securing the same with slender twine. I then replaced the earth, and the work was done for the season.

It is necessary to loosen the sacking or covering early in May every succeeding year, and wrap the tree again as above stated. When the animal is prevented from piercing between 'wind and water," its favorite haunt, it examines for some vulnerable point, but his depredations above the protection, with me have been exceeding rare, and when committed easily detected. Should it be necessary. it is an easy matter to wrap the tree to and around the forks, as there is nothing effectual short of a complete protection.

Since pursuing the above course, I have not lost one tree that was not too far gone to recover, and no new deposits under the covering has come to my notice.—Wm. McKie, *Salem, N. Y., in the Horticulturist.*

THE OSAGE ORANGE FOR HEDGES.

"A correspondent of the *Country Gentleman*, N. Bancroft, of Medina, N. Y. communicates the following to that journal:—

"A farmer from Hadley, Mass, is making inquiry in relation to the hawthorn for fencing purposes, and also for other plants for the same purpose It is but little I could say in favor of the hawthorn if I should undertake it; consequently, I will leave that for those who wish to advocate its qualities for that purpose. But I have a little to say to those farmers who wish to cultivate beautiful, durable and living fences, in favor of the Osage Orange. In 1852, I was traveling to the south and west about four months, and one of my objects in traveling was to learn what could be said in favor of the Osage Orange for fencing purposes. I found no objection to it by any person that had any experience in its cultivation.

"Since that time, I have been engaged in raising the plants from the seed, and lining my own farm as well as my friends and neighbors, with this beautiful hedge. Its growth is rapid when young, and it will mature in four years. But I have seen it protect corn fields in three years after the plants were set. The foliage is a dark shining green, and every leaf is guarded with a stout sharp thorn. The blossoms are very fragrant and the fruit is large and resembles the common orange.

"The seed should be sown in rows about eighteen inches apart, and the next spring they are ready to be transplanted in the hedge. My price for setting them in a hedge, is sixty cents per rod. after the ground is prepared. I would here state that a great share of the orange seed brought into this country is spurious or bad seed, owing to the manner in which it is cured or put up for market. For this reason I intend to embark for Texas in October, to procure seed that I can rely upon. If any of my friends wish to procure good seed, they can send in their orders to me.

PLANT A GRAPE VINE.

Every person who has the control of a square rod of ground whereon plants may grow, can scarcely do better than to set a grape vine of the Concord, Isabella or Dina varieties. The first cost is trifling, and the after-care of them, more of a pleasure than a task. The grape is not only palatable and nutritious for those who are well, but is exceedingly grateful to the sick, giving tone to the digestive organs, and healthy action to the whole alimentary canal.

Before setting the root, throw out the earth, to the depth of two or three feet and fill up ten inches with coarse manure of any sort, old bones, oyster shells, &c., and then throw in rich loam; into this rake a few quarts of house ashes, then fill up with loam and composted manure, and the soil is ready for the root.

After the plant is set scatter on strawey manure, or leaves, and through the summer occasionally throw upon this the contents of the tubs on washing days. A. J. Downing, late editor of the *Horticulturist*, says; "I have seen the Isabella grape produce 3,000 fine clusters of well ripened fruit in a season, by the liberal use of soap-suds from the weekly wash."

The effect of soap-suds on other plants is sometimes surprising. A cypress vine which had remained stationary for a fortnight, when about two inches high, immediately commenced growing after a good watering with soap-suds, and grew about six inches the first five days.

With a little care this may all be well done by any one who has never attempted it before. Under this treatment in the course of three or four years you will be amply repaid by a most beautiful crop

of luscious grapes, and a vine greatly ornamental to the grounds and dwelling.

Pruning.—The grape vine bleeds readily. Never prune at all, until the vine has grown one or two years for it needs the aid of the small branches in order to push forward large and vigorous roots. Late in October or in November is a proper time —never when the sap is in motion in the spring. As the fruit grows on new wood every year, in pruning it is necessary to cut back the branches to within two or three eyes of the main stem. The cultivator will find plain directions in *Cole's Fruit Book*, which costs but fifty cents, and it will enable him to see the whole operation illustrated by engravings.

Never pinch off the leaves to aid the ripening of the fruit, as they are placed there for the very purpose you desire to accomplish.

Plant a grape vine, and before long some of you will be thankful to him who gave you the hint.—*N. E. Farmer.*

PRUNING.

We commend the following to the owners of orchards. It is copied from the "N. E. Farmer," and accords with our own views:—

A Correspondent says:—I have lately noticed some of my neighbours, with jack-knife, handsaw and hatchet in hand attacking their fruit trees as though they were enemies whom it was their purpose to wound and mutilate and disable by all the means in their power. After the battle has been fought I have seen the ground covered with branches, and in some cases, with heads and trunks lying scattered in all directions around the scathed and bleeding trees, that remain like wounded and maimed soldiers, after a hard fought conflict. And the trophies of the victory thus obtained are carried off by whole cartloads, in the shape of sound, healthy sprouts and branches, covered with leaf and fruit-bud, and consigned to the wood-pile.

It seems to me that these good neighbours of mine are trying an experiment to see how much injury they can inflict upon their trees, without destroying their lives. When the Inquisitors stretch a heretic upon the rack, they place a physician by his side, with his fingers upon the pulse, to decide when the torture has been carried to the limits of human endurance. But not so with our tree-trimmers. They seem to think there is no limit to the endurance of vegetable life. This subject has often been referred to in your paper, and the evil consequences of such a course have been frequently pointed out. But the fact that this practice still continues, shows that enough has not yet been said. "Line upon line and precept upon precept," seems to be the only way in which truth can be fixed in the public mind. If those who pursue this course will watch their trees carefully, and observe the effects of their treatment for two or three years, I think they will be satisfied, that it is not only useless, but highly injurious. When the trees are trimmed in March, April and May, as soon as the warm weather comes on, and the sap presses into and distends the sap-vessels, it bursts out of the recently wounded vessels, and runs down and blackens and poisons the bark, and causes it to crack and separate from the underlying alburnum, and thus effectually prevents the healing of the wound. Gangrene and the death of a portion of the wood must necessarily follow. Where several such wounds are made in a tree, its whole constitution will soon become impaired. It ceases to grow, and in a few years droops and dies.

Trees that are trimmed the least, will generally be found to be the most vigorous, and to develope the best formed and most beautiful heads. Now and then, a limb that is putting forth in an inconvenient direction, or in a direction which will injure the symmetry of the head, should be taken away. A limb that is shooting out more vigorously than the rest, may be shortened, and when two limbs are chafing each other, one may be removed. Shoots that grow from the trunk, will generally cease to grow, when nature has no further service for them to perform. The idea of cutting out the whole centre of an apple tree, to let in the sun, is wholly erroneous. The tree is thus deprived of a large portion of its lungs, as well as of many of its best bearing branches. In our climate the fruit, so far from requiring the direct rays of the scorching sun in mid-summer, requires to be protected from its rays by the foliage which nature has provided. The directions given in English books for the cultivation of fruit, are adapted to the moist and cloudy atmosphere of England. The attempt to apply them to the cultivation of fruit in our climate has led to the adoption of much erroneous practice.

The best time for general pruning is a mooted question among intelligent men. But my own belief is that the proper time, in this climate at least, is in June and July, when the leaves have attained their full size, and are in full health and vigour, and are elaborating an abundance of sap. In this State a fresh wound will commence healing at once. New bark is rapidly formed to cover the wound. It is the descending the sap from which the new bark as well as all the other tissues of the tree are formed. When this sap, properly elaborated in the leaves, is not furnished to the formative vessels, no new growth of any kind is effected. Hence it is only when the leaves are in a condition to perform their proper office, that the new growth necessary to effect the healing of wound can be accomplished.

Wash Your Trees.—All fruit trees should be scrubbed or scraped clean of moss, old rough bark, etc., and washed with a mixture of weak ley, soot and sulphur. Say to one common water-pail full of ley, put one-fourth pound of powdered sulphur, and one quart of common chimney soot or lamp black. Washing the bodies of all trees with this at this season of the year, will destroy insects, open the pores of the bark and rapidly increase the growth and vigor of the tree. Lime-wash should never be used; it closes the pores of the bark, and is unsightly to any cultivated taste.—*Ohio Farmer.*

☞ The name *tulip* is derived from the Turkish, and the flower is so called from its fancied resemblance to a turban.

BOILING WATER ON FRUIT TREES.

Mr. Editor:—Can you tell me anything of the effect of boiling water poured around the roots of choice fruit trees? A lady from New Jersey, who is much interested in horticulture, says, if poured over the roots of the cherry tree in spring, it destroys the germ of insects deposited there, and makes the tree fruitful. I have never seen the experiment made, but I once rather mischievously poured a pailful of boiling water over the roots of a large grape vine, which had shaded the window inconveniently for many years, without yielding fruit, for the purpose of destroying it; and the result was, that it matured fruit that season, and continued to, for many successive ones.

If it is useful, at what season is it best, and how much may be applied with safety? F.

East Charlemont, May, 1855.

Remarks.—The above enquiry and remarks are evidently from one of our numerous female readers, who are becoming interested in what relates to the garden and farm. Hot water poured upon the roots of peach trees will prevent the curl of the leaf, and rejuvenate the whole appearance of the tree. We have never tried it on plums or cherries, but it is not clear to us why it would not be as beneficial to either of them as to the peach. Apply it in April.—*N. E. Farmer.*

To Facilitate the Growth of Foreign Seeds.—Mr. Humboldt has found that seeds which do not commonly generate in our climate, or in our hot-houses, and which, of course, we cannot raise for our gardens, or hope to naturalize in our fields, become capable of germinating when immersed for some days in a weak, oxygenized, muriatic acid. This interesting discovery has already been turned to advantage in several botanic gardens.—*Glasgow Mechanics' Magazine.*

Among the red currants, the large red Dutch are very fine; the cherry currants grows large and beautiful, but it is intolerably acid. The New White Dutch is a superior variety—not so acid as the Red Dutch, and quite large.—*N. E Farmer.*

Cucumbers, Melons, &c.—Lay off the ground in squares, three yards on a side; that is, with rows three yards apart each way. Dig for each hill a hole, a yard square, twelve inches deep, and throw a large wheel-barrow load of compost, consisting of equal parts taken from the pig-stye and the horse stable, cover to the depth of eight inches with rich mould, and the seeds, few in number, planted one inch below the surface will with due care, produce a hundred-fold.

Unstirred earth, striped bug and the cutworm, are the three enemies to be encountered Activity will expell the first—a solution of the fresh droppings of the cow-yard in water sprinkled over the plants with an old broom during a brief period. will expell the second, and personal inspection around the roots, in the season of the cut worm, with the finger or a sharp stick, will bring to light a brown ringed worm, about one inch in length—a foe the most insidious and destructive that the gardener has to fear. He is a glutton, gorging himself to suffocation during the night, and like a coward hiding himself from sight by day. Some with a lamp after dark overtake the marauder and inflict on him merited vengeance. Cucumbers for pickles should not be planted before first of July.

Communications.

PREPARATION OF VITRIOLIZED BONES.

Mr. Editor.—If we were asked what chemistry had done to improve the practice of the farmer, we would at once reply. that, to the suggestion of Baron Liebig, Professor of Chemistry in the University of Giessen, that bones, when employed as manure, should be dissolved in sulphuric acid, we are indebted for one of the greatest improvements in the agriculture of the last half century. The energy with which the farmers of England and Scotland have in this matter, followed up the proposition of that distinguished chemist, shews us that the time has gone by when the manufacturer, eagerly availing himself of the researches of the laboratory, could reproach the agriculturist with indifference to the advancement of his occupation. We learn from *The Agricultural Gazette*, that in one year, by the farmers in the neighborhood of the town of Spalding in Lincolnshire, the enormous quantity of one hundred and twenty-seven thousand seven hundred and fifty pounds of sulphuric acid were used as manure.

The value of vitriolized bones, as we are accustomed to term the manure produced by the action of sulphuric acid,—the oil of vitriol of the bleacher,—upon bones, has, we consider, been fully established by the experience of several years. It will be useful then to give some directions for the preparation of this compound,—by far the cheapest and most efficient manure which has yet been used by the turnip grower.

Most of your readers, who have directed their attention to agricultural chemistry, are aware, that one of the most important ingredients which a good manure supplies to the soil is that curious, waxy looking substance—phosphorous—which, fifty years ago, was scarcely known except to the chemist, but is now consumed in enormous quantities, in the manufacture of Lucifer matches, and other chemical purposes; 200,000 lbs. of it being yearly sold in London alone. Phosphorous, when burned, as when we ignite a Lucifer match, produces a peculiar sour compound, which by chemists is termed phosphoric acid. This acid exists in urine, and is a chief constituent of the bones of animals; in bones, however, the acid is in combination with the well known substances lime and magnesia, forming what in chemical language, are termed phosphates of lime and magnesia. These phosphates constitute from 50 to 20 per cent, of bones, and serve to give them that strength and solidity so necessary to the frame-work of the body. Every soil which is capable of producing crops must contain some of these important constituents; but in even the most unproductive, they are present

in exceedingly minute quantities, and must, if we would continue to raise large crops, be supplied by the husbandman.

A crop of twenty-five tons of turnips carries away from the field in which it is grown, about 36lbs., and twelve tons of potatoes no less than 96 lbs. of phosphoric acid. When we apply to a field farm-yard manure, the refuse of the crops of the farm, we restore only a part of the compounds of phosphoric acid which our cultivated plants require for their developement. In the grain sent to market,—in the neglected excrements of man and animals,—and in the streams that flow away from the manure-heap, how many tons of these substances are annually wasted!

In bone manure, the farmer is furnished with the most economical supply of phosphates; but as formerly applied, their beneficial effects were not fully experienced. It is now well known by practical men, that it is of great importance in the growth of the turnip, for which crop bone manure is chiefly used, that we should, in the early stages of its growth place within reach of the rootlets of the young plant, an abundant supply of food; until the rough leaves are formed, the greater portion of its nourishment is drawn either from the store of materials contained in the seed, or from the soil. The leaves are the mouths by means of which the plant appropriates the gases of the air, and in proportion as we increase their developement, do we enable it to draw in supplies of this cheap and abundant food. But bones, no matter how finely crushed, cannot supply the young plant with sufficient food at this critical period of its growth, because the phosphates which they contain are insoluble in pure water; and are converted into a form in which they can minister to the nourishment of plants only by the slow action of the rain which falls upon the field, charged with carbonic acid.

The employment of sulphuric acid has removed this objection to their use, by converting their insoluble phosphates into a form in which they can readily be taken up by the young plants. The changes produced by the agency of sulphuric acid are easily understood. When that acid is poured upon crushed bones the compounds of phosphoric acid, lime, and magnesia, which they contain, are broken up, a portion of the lime is seized upon by the vitriol which forms with it the well-known substance gypsum (*sulphate of lime*), while the portion of phosphoric acid with which the lime had been combined, being thus set free, unites with the remainder of the lime and phosphoric acid, to form, what is termed by the chemist bi-phosphorate or super-phosphate of lime, which differs from the original phosphate in being readily soluble in water.

The following directions for the preparation of the compound we can confidently recommend:

I. *How the bones should be prepared.*—The bones to be used cannot be broken too small; the more extensive the surface presented to the action of the acid, the more rapid and perfect will be the solution. The bones usually employed are in too large pieces; and a higher price should willingly be given for them, when reduced to a powder. In every farm-yard, an old sugar hogshead should be kept, into which all the bones, woollen rags, old hats, and broken leather, should be thrown and preserved, for being reduced to manure in the vitriol vat.

II. *Quantity of vitriol to be used.*—The acid should be purchased of full strength; that is, of the specific gravity at which it is sent from the manufactory viz., 1.845. It should be kept in a closed vessel, as, when exposed it rapidly attracts moisture from the air, and becomes weaker. It must not be forgotten that it will harm both the skin and clothes, if allowed to come in contact with them. When the strong acid is mixed with water, a considerable amount of heat is produced: twenty-five pounds of oil of vitriol, mixed with ten pounds of water, will raise the temperature to 266 degrees. The proportion of acid to be used in the preparation of vitriolized bones, is one hundred weight of acid for every two hundred weight of bones to be dissolved. A smaller amount of acid is frequently applied; but the above proportions will give the most satisfactory results.

III. *Quantity of water and mode of applying it*—When undiluted vitriol is poured upon bones, violent action is produced, but continues for a very short time, as the gypsum, which is the first new compound formed, covers the surface of the pieces of bone with a crust, which prevents the acid from coming into contact with the unaltered portions, and in consequence its action is retarded, and a perfect solution is not procured. If you drop some concentrated vitriol upon a piece of limestone, there is a bubbling up, or effervescence from the escape of carbonic acid gas; but it continues only for an instant. A crust of gypsum forms and protects the stone from the acid; but, if you use vitriol diluted with water, the action and escape of gas continue for a much longer time. The best plan, therefore, is to thoroughly moisten the bones you intend to dissolve, by pouring over them a quantity of water and allowing them to soak in it for an hour or two before adding the acid. The quantity of water used should be three or four times that of the vitriol to be employed. This mode of applying the water obviates the trouble of mixing together the vitriol and water in a separate vessel as some recommend, and the heat generated by adding the strong acid to the moistened bones, greatly

facilitates the decomposition, and hastens the preparation of the compound.

How the mixture of the above materials should be made.—Six bushels of bones, ground as fine as possible, are to be placed in any convenient vessel: An old iron boiler, or a sugar hogshead even though not perfectly water-tight may be made fit for use by plastering up the holes and seams with Plaster of Paris, or by filling them with melted pitch or asphate; and even a hole dug in the ground and lined with firm plastic clay may be used, when no proper vessel can be procured. An old sugar hogshead, however, with about a third of its length cut off, and the seams secured by a coating of pitch, alsphate, or plaster of Paris, makes a first-rate vitriol vat. In the first place, 48 gallons of water should be poured over the bones, and after allowing them to remain together for an hour or two, that the pores of the bones may be penetrated by the liquid, 133 lbs. of strong vitriol should be added, as the exact quantity of acid required should be ordered from the manufacturer, to avoid the trouble of weighing and pouring from vessel to vessel, which would otherwise be necessary. When the acid has been added, and the violent effervescence has ceased, the mixture should be occasionally stirred up; for which purpose a two-pronged fork may be conveniently used As the fumes which are given off are exceedingly unpleasant, the vessel should be placed under a shed at some distance from the dwelling-house. In about three days the solution will be ready for mixing with charred peat mould, saw dust, or any convenient substance; or it may be diluted with fifty or sixty times its bulk of water, and applied with the manure cart. The quantities given above will be sufficient to prepare manure for a Statute acre, and if used with half the usual quantity of farm-yard manure, which is a plan highly to be recommended in convenient situations, there will be a sufficient supply for two acres. The farmer will remember, that where vitriolized bones are the only manure applied, the addition of some alkaline substance will be found a judicious practice.

F. C. S.

The Oaklands, 2nd May, 1855.

THE GENERAL DRAINAGE AND LAND IMPROVEMENT COMPANY OF UPPER CANADA.

This communication reached us late in the month, or we would have inserted the Act of Incorporation, together with some remarks, which we may probably do in our next.—*B.*

It is with unqualified satisfaction that we take the earliest opportunity of announcing that this Company, which we have uniformly advocated, and which, it will be remembered, was introduced with marked favour at the Provincial Exhibition in London, last September, and spoken of in the President's address on that occasion, has become a reality, under a special Act of Incorporation conferred upon it by the Legislature; and, that our agricultural friends and the public generally may be aware of the facilities for improvement that now exist under its provisions, their attention is requested to the Act itself.

A considerable proportion of the shares required by the Act to be subscribed for are already taken, and from the very generally expressed interest in the Company, it is very probable that actual business will be commenced this season; at least as far as to begin a tilery or two, and shew what can be done in the manufacture of both drainage and sewerage pipes. It is well known that the English Drainage Companies are in extensive and profitable operation, paying good and regular dividends to their stockholders, and at the same time doing their work in an admirable, and efficient, and economical manner to the entire satisfaction of the community; and surely then, this Province, with similar means at command, may reasonably anticipate the same, if not greater results. The Company is under the control of an efficient Board of Directors, of which the Hon. Sir Allan McNab, the Minister of Agriculture, is president, and there can be no doubt but that with judicious management, the prospects of the Company are very encouraging, not only as an investment but as an undertaking calculated to render the most essential public service. We must commend it therefore to our Agricultural friends more especially, and also, with no less confidence to the public, because we know that the modern system of sanitory operations, which will be adopted, as far surpass in excellence the practices of former days, as does Railway locomotion that of our worst roads.

Branch Agricultural Societies—Have they a Right to a Share of the Public Grant?

[The following correspondence is published in order that all the parties interested may see it, and become aware of their rights and duties. The *names* are omitted, to prevent needless comment; but the points involved in the dispute may have some interest in other counties.]

May 21, 1855.

Sir,—I have been requested by the Directors of our Agricultural Society to ask your opinion relative to the intention of the law regulating the organization of such societies, in its application to township societies. We have a branch society, at ———, which we call the I——l Branch Agricultural Society of the County of ———. The County Society have taken umbrage at us for some unknown cause; and for the past two years

have refused to receive our report, or forward the amount we have subscribed, to enable us to participate in the Government allowance of funds. They say our name is illegal, as the act does not recognize such a name—it only includes *county* and *township* societies; and we have no right to call ours the I——l Branch. It has existed by the same name for the past eight years, and this great discovery was only made last year. We have had no difficulty heretofore, and the Society has gone on prosperously. Our subscription the present year amounts to £130. Will you please state your opinion relative to our position. I believe you were the person who framed the Agricultural Bill, and will have the best idea of what its intentions are.

Yours respectfully,

C. E. C.

Wm. McDougall, Esq., Toronto.

Millbank Farm, Yonge Street,
June 4, 1855.

C. E. C. Esq.,

Sir,—Your letter of the 21st ult., asking, on behalf of the Directors of the I——l Branch Agricultural Society, my opinion of the "position" of your Society, under the Act 16 Victoria, cap. 11, in respect to the Government grant, is now before me.

You state that the County Society has "refused," for the past two years, to receive your report, &c., so as to enable you to participate in the Government allowance. The "reason" of such refusal, you allege, is "unknown;" but you state, at the same time, that they object to your *name* as "illegal," because "the Act does not recognize such a name."

As you remark, the Act (16 Vic., cap 11) was drafted by me; but it needs no special acquaintance with that Act to perceive, that the charge of *illegality* against your Society on account of its *name*, is unwarranted. The 33rd section declares expressly that "Township *or Branch* Agricultural Society *may* be organized in *each* township" or in any "*two* or more townships together." I cannot undertake to expound the "intention" of the Legislature, except as it is to be collected from the words used in the Act, according to their obvious meaning; but I know that *my* intention was to put "Branch" Societies (several of which I knew to be then in existence) upon the same footing precisely as Township Societies; and such, I apprehend, is the meaning and legal effect of the 33rd and subsequent sections of the Act.

Where a society is limited to a single township, there is an evident propriety in calling it by the name of that township; but the Act does not *prescribe* that designation; on the contrary, it expressly permits the term, "Branch," instead. Township Societies are, *in fact*, "branches" of the County Society; and, if the Act were silent on the point, it would seem preposterous to argue, that calling the society by its true name, would put it out of the Act. It would be equally absurd to hold, that prefixing the word "I——l," or any other descriptive apellation, would make the Society anything else than a "Branch Agricultural Society," "organized in a township," or deprive it of any of the rights of such a Society. I assume, of course, that all the other actual requirements of the Act to constitute your Society a "Branch Agricultural Society" have been complied with.

In that case, the County Society has no discretionary power to withold your "share" of the grant. You are by law "entitled" to it, and can, no doubt, enforce your rights. The language of the Act on the point is imperative.

I would recommend you to peruse carefully the 33rd, 34th, 35th, 37th, and 39th sections of the Act. If legal proceedings become necessary, you will probably employ counsel, and he will point out the *mode*. I may suggest, in conclusion, that if not already incorporated, your Society may easily obtain the legal *status* of a corporate body by adopting a resolution, &c., as directed by the 42nd section.

I have the honour to remain,
Yours truly,

Wm. McDougall.

IMPORTANCE OF STOCK FARMING.

BY WM. HUTTON, ESQ., SECRETARY OF THE BUREAU OF AGRICULTURE AND STATISTICS.

(*To the Editor of the Agriculturist*)

Dear Sir,—Having witnessed in the market of Quebec what I considered a very remarkable circumstance, viz., the sale of a calf at the age of 9 weeks, at £4 5s and of several of 5 weeks, old at 50s each, and knowing the general very high price of meat not only here but in the Upper Province, and especially that of calves and lambs. I have been led to the consideration of the relative advantage between selling young animals and those of mature growth—whether black cattle or sheep—and also of the remedy for the present great deficiency in number of stock.

Our every day observation tells us that the most

successful farmers in Canada are those who feed well the greatest quantity of stock. Mr. Mechis' doctrine, "that feeding stock is simply an expensive "mode of procuring manure which might be more "cheaply procured by means of Guano and artificial "manures" is now become exploded—cattle and sheep have become now more than mere manure making machines." At present prices they are - *under almost any system* of good feeding—directly as well as indirectly profitable, but a most important point of enquiry has been hithe to very much neglected and that is whether animals should be fattened while yet growing or not until the frame has arrived at full size. This inquiry has with very many led to the decision that with the old unimproved breeds the only method possible to fatten them properly is to let them be full grown but the tendency of our improved breeds, both of cattle and sheep is so decided towards early maturity that both fatting and growth can and do go on prosperously together.

Experience has also long since proved that young animals of good breeds—if fed on food, rich in heat and flesh making elements, rapidly increase in size But as the absorbent glands can only take up so much within a certain time—whatever food is supplied in excess of that capability—passes off almost unprofitably in excrement—the manure may be richer but not so much so as to pay the farmer. It has therefore been latterly an important point of enquiry in fatting animals how much and what description of food will lay on the largest weight of meat without this waste. Achr Dunn, a large and excellent farmer in the county of Hants lately delivered a lecture at a farmers' Club in which he stated some very important facts with regard to the fattening of young animals, and which owing, to the present great scarcity of cattle in Canada cannot fail to be interesting to your readers, he says:—"Green food equivalent to 25 tons Roots and one ton of Cake, will afford nourishment sufficient to make a steer 800 lbs weight by the time he is 24 months old—this is exclusive of the wearing—1200 lbs is a good weight for a 3 year old ox—the grain in weight is therefore much greater for the food consumed for the first two years.—It will require for the last year nearly as many roots or their equivalent as for the other two years and a much larger proportion of cake viz. 1.825 lbs.—The weight gained by the third year's feeding would require to be 600 lbs which is considerably higher than the average gain for any length of time even by prize animals being 11½ lbs per week. I have fattened several at this age and have found that the meat gives satisfaction and that there is a fair amount of offal in the sheep of rough fat. Such being the case we ought to hear no more about the amount of capital required for stall feeding. Forty shillings for a newly weaned calf, and £10 or £11; invested in food during the 24 months is the whole affair in direct outlay, for which a quick return will be made with interest into the bargain, to say nothing of the manure—Sheep will pay equally as well as cattle when fattened young, indeed the practice is so common to fatten sheep under two years old that old wether mutton is a thing to be talked of but seldom seen. At one year old they can be sent profitably to market with a good quantity of edible mutton on thin backs, all that is wanted to make a sheep ripe at one year old is to take care that there be no standing still and from the day he is weaned till Michælmas there should be given one-third of a lb. of cake daily, and after that, one half lb. per day with cut roots and a little hay. At 12 months old they will be found heavy enough under this treatment to pay 6s per ton for the roots, prime cost for the cake and a fair price for hay and attendance, "(the cake he values at 1d stg. per lb")—We know that with regard to sheep the best farmers in Canada find the most profitable time for selling to be about 18 or 19 months. In our cold climate Nature provides the sheep with a good fleece early in the winter, in fact very nearly as heavy at Christmas as at the regular shearing time, so that at 19 months we have two fleeces from each sheep and after that period the increased weight of carcass (as Mr. Dunn observes) never pays in the same ratio.

At the present very high prices of beef and mutton these facts are deserving of attention especially as the practice of most farmers hitherto has been to allow their wethers to run to 3 or 4 or even 5 years old, and sell them at that age when the weight of carcass is (under any treatment) more than 50 per cent. greater than at 19 months and seldom 25 per cent. With common grass feeding the average weight at 19 months is about 14lbs. per Quarter, and at 4 years not more than 17 or 18. With the best stall feeding the weight would be much greater but the *ratio* of increase very little greater.

As the primary business of the farmer is the production of food and the object of agricultural knowledge whether the result of science or practical experience is to understand the processes by which the plants that he cultivates and the animals which he maintains may be made to contribute most profitably to that purpose the time is undoubtedly come in Canada when much more attention should be devoted to the raising of animal food in greater abundance than we have hitherto done. Not only is the live stock of the country evidently much decreased, but the wheat soils are being overaxed by a forced production of grain, the only remedy appears to be a more extended growth of root crops and greater attention to the fatting of young animals, whether black cattle or sheep—the immense price now paid for calves and lambs is a very great tempation to

farmers to sell their young animals instead of keeping them for the stalls or the yard, and the result will materially be a great falling off in the supply of manure, and consequently in wheat and other grain a year or two hence. With the prices now received, farmers, looking to present gain, are very apt to forget how necessary it is for the future well being of the farm to keep up the stock upon it.

"As to the best plan of feeding, Mr Dunn further observes, of all methods of housing cattle I prefer the box system, it allows as much exercise as is required to promote health, it permits no waste in the manure, which is pressed down so evenly and regularly that little fermention takes place, and consequently small loss is sustained by the escape of volatile gases, the liquid manure is completely absorbed among the solid, thereby saving the expense of tanks and all cumbrous appendages of pumps, hose, water carts, pipes or hydrants, which are all required onthe new system of liquifying the manure. "*Box* feeding (says Mr. Dunn) has a peculiar recommendation on sheep farms, which is this, that, a much larger quantity of straw can be made into manure in the box than in the stall. It has been proved, too, that a much greater return for the food is to be made by the cattle under this than under any other method of housing. Colonel M. Dowell says 10 per cent, more than the stall and 20 per cent more than the open yard, but of course all these advantages must be given up when there is not enough of litter, in such a case the stall is better than the box as the cattle would be wet and unconfortable, and be retarded in their growth.

In order to produce abundance of straw, and thence again abundance both of grain and straw, for straw produces straw,—the great secret for Canada appears to be—the substitution of green crops for naked fallows. In Great Britain the practice of naked summer fallowing bids fair at no distant day, to be numbered with the things that were,—the high price of cattle and sheep here, ought to lead towards a similar result,—the soil of Canada. in its normal condition, may grow from 15 to 30 bushels of wheat per acre, but in order to increase the produce above that normal ratio —there must be deposited in the land, the material whence the extra produce is to draw its support. The experience of the older States, is every day teaching us that they cannot even maintain the normal ratio without the aid of stall feeding of cattle on root crops—their produce is every year diminishing and so with ours in Canada, if we do not profit by their experience.—The last U States Census shows us, that the falling off of the wheat crop in the old States is enormous, and this has not arisen from any particular calamity of fly or blight, or insect, or particular seasons,—but has been a steady gradual falling off occasioned by overtaxing the normal soil, and neglecting to supply the required nourishment in the shape of animal excrement enriched by the use of fattening food. It is to be hoped the time is not far distant, when it will be with us as it is now in the best agricultural districts of great Britain and Ireland, that the estimate of a man's abilities as a farmer, is formed solely by the quantity of live stock which his farm is made to maintain, and the rapidity with which he brings them to early maturity.

It would appear then if the above observations are correct, that the most rational and feasible method of supplying the great deficiency of cattle is to grow green food and endeavour to force forward the few that we have in the country, to make them sooner ready for a sharp market, and with all the exertions that can be used, the market is likely to continue sharp for some years before the farmers of Canada can overtake their neglect of cattle rearing. This neglect has arisen from the desire of taking a *short cut* for the production of wheat, which latterly has been more dollar producing, than the growth of cattle, but that short cut will turn out to be no very sensible path.

The only legitimate channel for the increase of grain growing, is by the increase of stock-feeding,—and to bring up on lee way as quickly as possible—the rearing of cattle and sheep, that come early to maturity cannot fail to be a most important disideratum.

Yours, &c.,
WILLIAM HUTTON.

Office, of Statistics, Quebec, June 21st, 1855.

Hon. Adam Ferguson on Canadian Improvement.

Woodhill, June 23rd, 1855.

Dear Sir,—I beg leave to offer you a few passing remarks upon a portion of the Province, through which I have just passed; in the Backwoods of which, including Guelph, Fergus, &c. I have lately spent a most agreeable week. I left this for Guelph, upon Wednesday week. For the first twelve miles I had a tolerably rough, ride, upon a new joint stock road along the Township line of East and West Flamborough. It will no doubt, in due time, be satisfactorily completed, but must be confessed, at present to be sufficiently racking both for springs and loins. The Agricultural improvement, in this quarter, is quite remarkable &c., a general spirit of emulation seems to animate every settler on the line.

Municipal government and renumerating prices have done their work; and the fruit is sufficiently obvious in preparations for building and enlarging Churches, Schools, Mansions, barns &c., &c., while the variety of farm implements, waggons and *spring buggies* at the waggonmakers' doors testify the im-

provement in our roads, and general prosperity, of the certainly not least important class of the community. It was pleasant, too, to note the excellent condition and improved form of the Live Stock, and the host of healthy, chubby younkers, romping at play, or plodding to and from the Common Schools.

The crops, in general, as an average, may be pronounced promising I do not think that appearances, at this date, indicate, a very early harvest, and should it prove comparatively late, we must leave a fair margin to fill up Still, *laying that to that*, I don't think our farmers, will have much reasonable ground to grumble, though grumble, they no doubt will, as you know "*Tis my vocation, Hal.*"

I was well pleased, also, to notice numerous mercantile establishments, of the usual miscellaneous character, every where springing up, which I would fondly hope will tend materially to put down those wretched *groggeries*, so fertile in evil, and give the farmers, a taste for adding to their personal and family comforts, by a useful and respectable expenditure. There can be no doubt, too, that those individuals who established rural Stores, are both able and willing to aid the advancement of agricultural improvement, in various ways, and always afford facilities to the Post Office Department, to multiply important accommodations. Among commercial men who have shown a deep interest in farming operations, I may notice Mr. Stone of Guelph, whose name is not unknown to you. Mr. S. owns several farms, cultivating them in good style, in all departments. I spent a great part of one day with much gratification, upon one of his farms in the Plains of Puslinch The soil is of first rate quality, and by the services of intelligent, skilful farm labourers, the work is done in good style. I never saw a cleaner, better dressed wheat fallow, and the turnip field would have done no discredit to Northumberland itself. Mr. S. has invested a large Capital in Improved Durhams, and friends in England have ably seconded his views. He now possesses a large portion of the BATES & DUCIE blood. Last year, a neighbouring farmer, Mr. Iles, went to England on his own and Mr. Stone's account. A very valuable herd was purchased,—the whole of which was swept into the deep, by an overwhelming wave and a serious loss to the parties occurred. Neither of these breeders, however, lost courage. Not very long ago, Mr Iles purchased, at a handsome price my Bull KOSSUTH, and Mr. Stone again resorted to the English market. This great importation, only arrived a few months ago, and in judging of their merits, we must allow them, a few months more, to become acclimated; and to recover the privations of their voyage. With that care which they will now receive, and with ordinary luck, Mr. S. must now assuredly take a high position among Canadian Breeders. He now possesses over 20 *head of* Herd Book animals. It would be hazardous to name favourites, but I cannot deny myself he pleasure of noting his 2 yr. old heifer DAPHNE and his Cow MARGARET, for whose heifer calf Mr. S. lately refused £100.—A spring bull calf delighted me so much, that I shall not deny a close trespassing on the borders of the tenth Commandment, in regard to him.

Mr. S. is also establishing, by importation from the best flocks in England, the Cotswold sheep, and has every prospect of securing the success, which liberal expenditure and judicious selection, deserve.

The intensity of last winter's frost in this quarter now too palpably exhibits its mischievous effects. Our finer fruit trees and more delicate shrubs, are much damaged. We shall neither have Peaches nor Grapes. Last year we supplied the finest peaches to the pigs in bushel measures, this season not one for the table. Well! thank God, we can live without either.

Our Potatoes have kept remarkably well, and the old, will meet the new (garden) crop. Assuredly we have a noble country, though as an honest settler in the Backwoods, who does not exactly stomach the Village Lot fever, remarked to me a few days ago. "Why Sir, we shall soon find *no country* left, it will be all one great *town*. I hope you don't forget your field or to give us a benefit in this quarter soon, and now, wishing you all health and comfort,

Believe me very sincerely yours,

ADAM FERGUSSON.

To Geo. Buckland Esq. &c, &c., Toronto

A NEW HORSE RAKE.

(*To the Editor of the Agriculturist.*)

SIR,—Knowing that you are a friend to the farmer, and ready to encourage whatever lessens his labour, I beg to inform you that I have lately obtained letters patent for an improved Horse Rake, with which the labour is performed with more ease, and more can be done in the same space of time, than by any other Rake now in use in this Province. A man and horse can rake from 15 to 20 acres of meadow in a day, and it is done as well as by hand. This rake has been in use the last six years in the united counties of Leeds and Greenville, where it is held in high estimation by the farming community,—so much so that it has completely driven all other kinds of hay-rakes out of the field and only requires to be known, to be universally approved. I have the strongest certificates as to the superiority of the article. I need only mention the name of John H. Hough, Esq., well known to the principal agriculturists of Canada, whose opinion of such matters may with confidence be relied on. It is easier to rake with this rake than with any other I have seen. It will rake over uneven ground, where the Revolver would be utterly useless. It is easy for both man and horse. The following is a brief

description of the implement.—There are two wheels about 4 feet 3 inches in height; an axletree about 8 feet 2 inches between the shoulders. The shafts are 9 feet six inches long. The slats to which the teeth are fastened, are 4 feet long; the teeth 2 feet 2, fastened to the slats by iron braces. There are twenty slats and teeth; a half inch rod runs over the axletree through all the slats. The slats project horizontally back from the axletree, from which the teeth descend to the ground, forming an angle rather more acute than in the common rake. The person who rakes rides in front of the axletree, and raises the teeth from the ground by means of a treadle fastened to the axletree, which is done with ease, as the driver unships the load by throwing up the teeth, and immediately lets them down. Each tooth is independent of the rest, and therefore accommodates itself to an uneven surface.

Such, Mr. Editor, is an imperfect description of the Rake I wish to bring before the public through the medium of your widely circulated and useful journal.

N. B.—I am ready to supply orders addressed to me at Brockville. Mr. Haworth, merchant, Toronto and Mr. McDougall, Yonge street, will also receive them. Price with wheels $25 to 30; without $14 to $18.

I am, Mr. Editor,
Your obedient servant,
WM. NIBLOCK.

Brockville, June, 22 1855.

[One of the above Rakes may be seen at the writer's farm, Yonge street, township of York. We shall put it in operation as soon as possible, and have little doubt of its success. We shall, however, be able to speak more positively *after* trial. Orders left with us may be supplied in four or five days. We understand Mr. Siblock to guarantee them to work well —no work no pay.]

Miscellaneous.

DUTIES OF THE FARMER TO HIS FAMILY.

The following extract from a lecture by Dr. Reynolds, a citizen of Massachusets, may prove useful to some of our readers in Canada:—

"Order and neatness are among the marks of good farming. Where these are wanting in the arrangements about the house and farm-buildings, they will be wanting on the farm. The farmer is bound to train up his family in good habits, and habits of order, by which everything shall be kept in its place, and everything done in its proper connection, and habits of neatness, which shall lead to the instant detection and removal of every nuisance, are among the good habits in which children should be brought up from their infancy. The health, the comfort, and the respectability of his family demand this at his hand.

Among the provisions which the farmer should make for his family, are all those arrangements and utensils which are calculated to save time and labour and strength. There is much hard work to be done in the family of the farmer, and on certain days and at certain seasons, the females are tasked to the full extent of their strength and powers of endurance. Now, I would not recommend that you should get every new pattern of cooking-stove or washing machine, or churn, that you may see advertized in the newspapers. But I would have you to keep those in good order that you have, and in a condition always ready for use. Have them in a convenient place, and so arranged as to save steps and strength as much as possible.

Provide for the happiness of your family. Many little attentions to their comfort, and arrangements by which their labours may be facilitated, contribute much to promote their happiness. The mistress of the family has many things in the care of her children, and in the labours of the family, to exhaust her strength and to try her feelings, and the good wife will not fail to appreciate all the arrangements you may make for her relief, and will amply repay you by her cheerful smiles, and increased patience and sweetness of temper.

Never require the females of the family to do those things which properly belong to the other sex. They should not be required to split the wood, or even to carry it into the house; to shovel the snow from the clothes-yard, or to sweep the paths and alleys around the house, or carry pails of food to the hogs, or dig the potatoes for dinner. Many a farmer's wife has been, and now is subjected to drudgery of this sort. But it is to be hoped that the days of such service are nearly ended. All such labours should be considered a part of the daily business of the farm, and should be attended to in their season. The man who loves his wife, and wishes to make his home a happy one, will regard her feelings, and never subject her to mortification or degradation. Nature has implanted in the heart of every woman a desire to appear well in the eyes of others; this desire should never be contravened unless it oversteps the bounds of propriety, but should be indulged so far as your means will justify. It is associated in her mind with the feeling of self-respect, which is one of the best safeguards of a virtuous character. Never, by unremitting toil, render that fair and blooming countenance, and those delicate features, coarse and and harsh, and cause that beautiful, active, and symmetrical form to become bowed, crippled, and distorted by incessant drudgery. Remember that woman is not endowed by nature with the same muscular strength and power of endurance, which she has given to man. Her strength consists in her weakness, which appeals to you for support and protection, and in her beauty and gentleness, which appeal to your love and affection. And in all the arrangements of the household, you should remember that the duties of women are not to be accomplished by muscular power and brute force but rather by skill, by tact, by perseverance; and in proportion to the extent of her labors and cares, should be the facilities and aids supplied to her. Thus will her strength be spared, and her time saved

for the cultivation of her mind, for the instruction of her children, and for the performance of those gentle charities that so beautifully adorn the female character. And how much more cheerful, aye, and successful too, will be the labours of the field, when the sweet and happy smile of the contented and happy wife meets you at the threshold, and sheds sunshine through your dwelling.

Another and most important duty which the farmer owes to his family is to supply them with the means of moral, religious and intellectual culture. Let your children be trained from their earliest infancy to be affectionate, kind, obedient, truthful, industrious, and as fast as their intellect is developed let it receive appropriate culture. Never grudge the cost of books, periodicals or papers, or taxes for the institutions of learning. Money paid for the education of your children is the best investment you can make for them, and remember that as the world advances in knowledge, and the comforts and conveniences of life increase, the standard of education must be elevated from generation to generation. It is not enough that your children are instructed in those things that you learned in the schools of your boyhood. They must be taught those that you now, in your manhood, feel that you need to know. There has been, as you all know, a great revival of interest in the cause of education, within a few years past. Catch this spirit, and let it enter into all the arrrangements or the education of your children. But I must cut short my remarks upon this copious theme, and will only add, that you cannot afford to dispense with the institutions of religion, for to these we in New England are greatly indebted for our worldly prosperity. Teach your children to reverence the sacred word, to remember the Sabbath, and to do to others, as you would that others should do to them; and never forget that in all these respects, your own example is the most efficient teacher, and that the lessons they are thus taught, will make the deepest impression upon their minds."

MACHINE FOR CHOPPING BRUSH.

A correspondent of the *New-England Farmer* gives the following account of an invention of Mr. Daniels, of Vermont, (of Woodstock, we suppose, the inventor of one of the best of hay-cutters) which he saw in operation on the farm of Col. Stanley, of Methuen. We do not quite comprehend its form but its efficiency seems very evident. The writer says:—

In passing through Methuen a few weeks since, I had occasion to call on Col. Charles E Stanley, of that town, when I was shown by that gentleman a machine, or rather, cutter, belonging to him, to which horse-power is applied, for the purpose of cutting limbs and brush at the door. It is called "Daniel's Patent," of Vermont, being very much on the principle of some hay cutters on y on a much larger scale. Two huge knives, about eighteen inches long; one-half inch thick, and four and a half in width, are strongly fastened on the shaft roll. A good feed roll is also applied. Hard wood limbs, without trimming, that are not more than three inches or pine that are not more than four and one half inches through at the butt, are cut with ease. By changing the gearing, they can be cut any length desired from four and one-half to one fourth of an inch in length. When green pine limbs are cut two inches long and spread upon a floor not more than ten inches in depth, they will dry so as to burn well in a week.

Col. Stanley says he can cut limbs and brush to the above degree of fineness faster than a smart man, with a good yoke of oxen, can haul and dump them from one-fourth of a mile distant. The advantage of cutting it so fine is that it brings much scraggy and otherwise worthless brush. up to more than the value of its weight in solid wood, which, in these times of scarcity and high prices of fuel, is an object of too much importance to be overlooked. Col. Stanley's neighbors bring brush to him to be cut on equal shares. As near as I could judge, the machine will do the work of forty men.

The reason that the chips dry so quick, is, that they are not cut square off, but obliquely, one side being concave, and the other convex; consequently they are shattered to such a degree, that the air is admitted entirely through them, and the drying process immediately commences.

BEECH FOR HEDGES.

The editor of the *Maine Farmer*, recommends the beech tree for hedges in that State for the following reasons:—"It is a native of our soil—it will bear pruning, and if pruned right, it will become thick and bushy, and be impenetrable to man and beast. It is long lived, and is not infested or attacked by insects." He quotes from the "Hand Book of Emigrants to New Brunswick," the following confirmation of his views:

"Very solid and elegant hedges may be made with young beeches placed seven or eight inches apart, and bent in opposite directions, so as to cross each other and form a trellis, with apertures five or six inches in diameter. During the first year they are bound with osier at the points of intersection, where they finally become grafted, and grow together. As beech does not suffer in pruning, and sprouts less luxuriantly than most other trees, it is well adapted for hedges. The red beech is reared without any difficulty from the seed; it grows rapidly, and if the soil is in good order, a handsome and sufficient hedge may be produced in five or six years."

The Osage Orange is the principal hedge plant in the Western States but we have seen it stated that this plant does not grow well in Canada. Who can give us the result of a fair trial? We know the beech grows to perfection; who will give it a trial?

QUICK WORK.—It was once the fashion to wear coats, the material of which had not long before been on the back of the sheep. For rapidity of work this way, I know nothing that can compete with the achievement of Coxete of Greenham Mill, near Newbury. He had a couple of South Down sheep shorn at his factory, at five o'clock in the morning; the wool thus produced was put through the usual processes; and, by a quarter past six in the evening, it resulted in a complete damson-coloured coat, which was worn at an evening party by Sir John Throckmorton. A wager for a thousand guineas was won by this feat, with three-quarters of an hour to spare. The sheep were roasted whole, and served up at a splendid banquet. In one day they afforded comfort to both the inward and the outward man.—*Habits and Men.*

USEFUL RECEIPTS.

A correspondent of the *New England Farmer* sends the following receipts to that Journal :—

Rearing Calves.—I have sometimes raised calves by allowing them to suckle cows for the first three or four months after birth, sometimes by giving them milk to drink for about the same time, and in one or two instances, for want of milk, have brought them up on gruel. Latterly I have practised the following mode, and think it on the whole, the best of any I have tried:—

Take the calf from its dam when only a few days or a week old, according to the condition of the cow's bag, and learn it to drink new milk, warm from the cow, feeding it thus, twice a day till five or six weeks old. Then begin quite gradually to lessen the quantity of new milk, adding in the place of that taken away, an equal measure of skimmed milk—the milk, previous to skimming, having stood about twelve hours, and, before it is given to the calf, having been warmed to the temperature of new milk. So graduate the reduction of the new, and the addition of the skimmed milk, that the latter shall constitute the entire mess for the calf when it arrives at the age of eight or nine weeks. When the calf is five or six weeks old, give it a few dry oats, say a moderate handful daily, and increase a little at a time, till at and after ten weeks of age the calf shall receive about a pint per day; also, at the age of five weeks, begin to feed a little nice fine hay. When the calf is ten weeks old, the milk it receives may be that which has stood longer than twelve hours before being skimmed; also at and after this age, the quantity of milk may be lessened gradually, and water substituted for the milk taken away, so that when the calf is twelve or fourteen weeks old, the milk shall be wholly withdrawn and the calf shall receive hay, oats and water, or shall be turned off to good pasturage.

Thus managed, the calf will never know when it was weaned from milk—will have no season of repining and falling away in flesh, or remaining stationary in growth—will have no troublesome habit after the time for weaning, of sucking cows that may chance to be in the pasture or yard with it, and will be quite as large, plump and symmetrical when a yearling, as though it had been raised by the more expensive mode of suckling a cow. During the winter preceding the period when the calf becomes a yearling, it should be fed on the best of fine hay, with one quart of dry oats, or six to eight quarts of mashed roots, daily. It is not a good practice to feed meal to young calves, either before or after weaning, the meal being too heating, injuring digestion and bringing on purging, and worse still, if fed freely, causing the calf to grow out of shape, picked and scrawny. It is also difficult to rear a well shaped calf on gruel, because of the meal of which the gruel is in part made, and because the quality for forming well-developed bone and a well-shaped body, which milk eminently possesses, is too much lacking in the gruel.

Cure for Purging.—Take of pulverized common white chalk, and of ginger, each a tablespoonful, put the same into the calf's milk, and stir it well while the calf is drinking it—the tendency of the chalk being to settle on the bottom of the pail or trough. I have used this remedy for a dozen years or more, and have recommended it to many persons during the time. However, if a calf is carefully watched from day to day, and fed on proper food, suitably warmed, there will seldom be any occasion to treat him for any malady.

To Cure the Garget.—A writer in the *Ohio Farmer* says that a cow affected by the garget may be cured by rubbing the bag thoroughly, in all parts, with linseed oil; that one application is usually sufficient, if done on the first appearance of the disorder, and that two or three rubbings in any case will effect a cure. He also states that he has seen cows from whose bags, by reason of the garget, no milk could be drawn, so far cured in forty-eight hours that they would give nearly as much milk as previous to the attack, and show no further symptoms of the disease.

To remove Vermin from Cattle.—Dissolve camphor gum in new rum, making the liquid pretty strong of camphor, and apply it on various parts of the body of the animal. It is a harmless application, so far as the animal is concerned, leaving the coat free and clear but destroying the lice. In about two or three weeks after the first application, rub on the liquid again, in order to kill the young vermin that may have hatched out after the first rubbing. I know of no safe application which will prevent the eggs or nits from hatching.

To prevent Field Mice from Girdling Trees.—In passing over the farm of Mr. Solyman Cune, of this town, a few days ago, I saw the following plan in use to secure his fruit trees from the depredations of the field mice, they having formerly caused him much vexation and loss by eating off the bark of his trees. Small blocks of slitworkstuff sawed say four to six inches long, are provided, and bored partly through, lengthwise, with a 1¼ inch augur; ratsbane and Indian meal are mixed together, in proportion of one-fourth of a pound of ratsbane to two quarts of meal; into the hole in each block is put a teaspoonful of this mixture, and a block is placed near each tree, the bored end lying a little the lowest, to keep out rain; the blocks are covered with boards, some two feet or so long, and of suitable width; and the mice on approaching a tree, run under a board for shelter, eat of the ratsbane and meal, and die, and the tree escapes uninjured. I examined many of Mr. Cune's trees, to see how the plan worked, and in no case discovered any injury to the bark by mice.

Discovery of Glass.—The art of making glass is not of very high antiquity, though it appears to have been practised among the Phœnicians some centuries before the Christian era. Pliny's account of its origin is very probable—"That the crew of a merchant vessel which entered the river Belus in Syria, having gone on shore, kindled a fire on the *sand*, and supported the vessel in which they were to cook some provisions on blocks of *nitre*, that made part of the cargo. The fire which gradually dissolved the nitre, and mixed it with the sand, occasioned a transparent matter to flow, which, in fact, was nothing less than glass."

THE PHILOSOPHY OF RAIN.

To understand the philosophy of this beautiful and often sublime phenomenon so often witnessed since the creation of the world, and so essential to the very existence of plants and animals, a few facts derived from observation and a long train of experiments must be remembered:

1. Were the atmosphere everywhere, at all times of a uniform temperature, we should never have rain, hail or snow. The water absorbed by it in evaporation from the sea and the earth's surface, would descend in an imperceptible vapor, or cease to be absorbed by the air when it was once fully saturated.

2. The absorbing power of the atmosphere, and consequently its capacity to retain humidity, is proportionately greater in warm than cold air.

3. The air near the surface of the earth is warmer than it is in the region of the clouds. The higher we ascend from the earth the colder do we find the atmosphere. Hence the perpetual snow on very high mountains in the hottest climates.

Now, when, from continued evaporation, the air is highly saturated with vapor, though it be invisible, and the sky cloudless, if its temperature is suddenly reduced by cold currents descending from above, or rushing from a higher to a lower latitude, or by the motion of saturated air, to a cooler latitude, its capacity to retain moisture is diminished, clouds are formed, and the result is rain. Air condenses as it cools, and, like a sponge filled with water and compressed, pours out the water which its diminished capacity cannot hold. How singular, yet how simple, the philosophy of rain! What but Omniscience could have devised such an admirable arrangement for watering the earth.—*N. Y. Observer.*

AMERICAN CLIMATE.

Dr. Holmes, in a recent lecture on "the Americanized European," said:—

When a British steamer unloads her living cargo at our wharves, at once is recognized the contrast between the redder and rounder face, the plump developed limb and muscle, as compared with the American. They fill their coats fuller, they walk more briskly, they articulate more vigorously, they are warm, jolly, and athletic.

The change in complexion was attributed to difference in climate. The prevalent early decay of teeth was charged to the same cause. The numerous pale faces to be seen, and languid ailments, so fashionable, should not be attributed to wrong living and wrong habits as they mainly were. There were faults in this respect—lamentable faults—but the invalid was too much scolded. The lecturer adverted to means within the reach of every American, to counteract the baneful physical phenomenon to which he was subjected. The importance of air and exercise, was not, he said, sufficiently understood. The English gentlemen hunt, shoot, ride, box, play at cricket, get up pedestrian matches, and the English ladies leap fences on their hunters, tramp about like dromedaries on foot, drive about four in hand in their equipages. The reason is, they come into the world with good stout solid organizations. Why American ladies do not heartily join in such out-door exercises, is because they have not vigorous stamina, the overflowing red blood in their veins, the substantial muscles in their limbs that drive to such exercises as a rational outlet for their superfluous vitality. The changeable weather here tended to discourage such exercises. The vacillations of temperature, contrasted with England, were referred to as causing much of the ill-health of America. The vegetative life of the American, and attendant pale complexion, narrow face, faulty teeth, spare outlines, fatigued features, were all only owing to the action of the elements and the imponderable agencies with which he was surrounded.—There was not, however, the lecturer stated, material difference in the longevity of the inhabitants of Old England and the denizens of New England. The American had strength of endurance—few lotus eaters or lazzaroni are among them. The body of the American is chastened and prepared for life, and made bold by the scourges of the lawless elements. There is little blood and much nerve in the sharp featured Roman of the new Republic.

Lime Water in Making Bread.—In bread-making, the vinous fermentation sometimes passes into the acid, thus rendering the bread sour and disagreeable. Liebig has lately performed a series of experiments to improve the preparation of bread, from which he comes to the conclusion, that the only effective and innocuous means of improving the qualities of wheat and rye bread, is limewater. In making dough he advises one pint of clear limewater to be used for every five pounds of flour. The limewater is first added to the Flour, after which a sufficient quantity of common water is added to work the whole into good common dough—the leaven being mixed with water, can be prepared by stirring some quicklime in a vessel containing pure cold water then allowing the sediment to settle. The clear is then to be poured off, and kept in bottles for use. No care is required respecting the quantity of lime to be stirred in the water, as it will only take up a certain quantity and no more. Those who use saleratus (bicarbonate of soda) in the raising of bread, are recommended to cease its use, and employ pure baker's yeast, and a little limewater. Our bones are composed of the phosphate of lime, and those who use fine flour, require for their health a little more lime than is contained in their food. Cream of tartar and carbonate of soda are inferior to common yeast for making healthy bread.—*Scientific American.*

Toasting Eggs.—An egg, the adage says, is "*greim gun choimeas*"—that is, *the most substantial of morsels;* and a toasted egg everybody knows to be more nutritious and wholesome than a boiled one—nay, to some certain complaints, as *heart-burning*, for instance, it proves a most efficacious therapeutic. There are many, I have no doubt, who have tried to toast an egg, but who, for a very good reason, would not willingly repeat the experiment. Of this class I myself, indeed, would have been one, but for a discovery in itself very simple. The first time I tried to toast an egg, I had the mortification, not only to *hear* by report, but with my own eyes to *see* my hopes literally blasted! The cause of this disaster I leave your more philosophical correspondents to account for; my present purpose is to prescribe a preventive of such a disaster, which in brief, is just to break gently both ends of the egg before putting it in the hot embers before the fire, and also to keep it well turned in order that every part be equally toasted.—L. M. L.

WHAT SCIENCE CAN DO.—Let all the air which enters the lungs pass through a medium of carbon, and you may go to sleep safely under the shadow of the upas tree. The charcoal respirator of Dr. Stenhouse will procure immunity to him who sojourns in a rice-swamp or shoots in a jungle. The betelnut and the pepperleaf chewed together keep half starved races alive in the deltas of the Irrawaddy and the forests of Sumatra. A French traveller "preserved his health during a long and difficult voyage by the habitual use of betel, while his companions, who did not use it, died mostly of dysentry.". The nitrogenous compounds to which all nations resort in intermitted fevers have a conservative as well as a curative power; the pepperworts contain "a solid white crystalizable substance, known by the name of 'Piperin,' which is said to equal quinine." The Indian, by instinct, chews the betel and the pepper together; the *rationale* is this, "while in betel chewing the astringent principle of the nut checks the tendency to internal relaxation, the fever-chasing principles of the pepperleaf preserve the health amid the steaming vapours which the hot sun draws forth from swamps and jungles and irrigated paddy-fields." It stands upon record that a certain military officer, at a certain period critical to health, paraded all his regiments for blue pill at night, and paraded them again for black draught the next morning. See what an additional force is concentrated in a very little knowledge! The time may come when an army shall plunge boldly into the most malarious districts, parading only in the first place for betel-nut and pepper-quid; shall make forced marches of fabulous distance with an "*acullico*" of cocoa-leaf in their mouths; with a similar preparation, or a fraction of a grain of arsenic, shall climb heights like those which the Zouaves scaled on the day of Alma, and arrive at the summit with ample wind for a charge; shall manœuvre to get the weather guage of their enemies, and discharge into their ranks a few rockets charged with cyanides of kakodyle; and, having done this, shall sit down and feast like Britons upon their glory, and, like the Ottomans of Orinoco, upon a roasted ball of potter's earth.

HOME MANUFACTURED GUANO.—In one corner of your barn cellar, or in any other convenient place where it will not be exposed to the rain, build a bin or mortar bed, and into this collect your wood-ashes the scrapings of your hen-house, the fine chip dirt that collects in your wood-yard, frequently shovelling it over, and mixing about the same quantity of well-rotted soil, or muck, if you have it; and you will find this to be a valuable compost for almost any purpose for which guano is used. It will be found almost equal to the best, and far superior to many of the patent manures now in vogue. About half a pint of this to a hill will be enough for most purposes. Two years ago, I tried it in my corn field with good effect. I first ploughed under the manure, and put about half a pint of the compost in the hill without. There was almost double the corn where I planted with the compost in the hill. About eight cords of manure to the acre was plowed under on the whole field. The compost gave it a start that it did not forget the whole season.—*Boston Cultivator.*

DRIED PLUM PIES.—Soak the plums, and stew them gently; season them with spice; sugar; put a puff paste on the plate; then put a layer of the plums, stewed; roll out a piece of paste thin; cover them; add another layer of plums, and cover for the last time.—You may have as many stories to your pie as you choose.

TYPE-SETTING BY MACHINERY.—John F. Trow, of New York, has at work in his office five type-setting machines—all that have been made. They are the invention of a brother of John Mitchel, the Irish exile, and the inventor gives them his personal superintendence. The New York *Mirror* states that the volume of Bancroft's "Miscellanies" was all put in type by these machines, and they are now at work on Irving's "Life of Washington." The same journal testifies that the type setting is done with remarkable accuracy and great rapidity, and adds:—"In fact, these machines cannot make a mistake if the performer upon them touches the right keys. We shall not undertake to describe this wonderful labor-saving invention except briefly and in general terms. It must be seen at work in order to be appreciated and admired. The machine is of a triangular shape, somewhat resembling a grand piano forte, only not as large. It has a key-board corresponding to the letters of the alphabet and the 'punctuation marks,' as the keys of the piano represent the various notes in the scale of music; and the work is done by playing upon the finger-board precisely as tunes are played upon the piano forte. This part of the performance is done by girls, who acquire the art with great facility. The letters are supplied by long gallies, each filled with a single letter, which require constant replenishing; and every touch upon the key sends the desired letter into a long line beneath the machine, from which it is taken by a compositor, broken into lines to suit the width of his page or column, and 'justified.' The 'distribution' of the type is as ingeniously managed as the 'composition.'"

INDIAN MUFFINS.—A pint and a half of yellow Indian meal, sifted. A handful of wheat flour. A quarter of a pound of fresh butter. A quart of milk. Four eggs. A very small teaspoonful of salt. Put the milk into a saucepan. Cut the butter into it. Set it over the fire, and warm it until the butter is very soft, but not until it melts. Then take it off, stir it well until it is mixed, and set away to cool. Beat four eggs very light; and when the milk is cold, stir them into it alternately with the meal, a little at a time of each. Add the salt. Beat the whole very hard after it is all mixed. Then butter some muffin rings on the inside. Set them in a hot oven or a heated griddle; pour some of the batter into each; and bake the muffins well Send them hot to the table, continuing to bake while a fresh supply is wanted. Pull them open with your fingers, and eat them with butter, to which you may add molasses or honey.—*Farm Journal.*

A STARE.—"Father, I hate that Mr. Smith," said a beauty, the other day, to her honoured parent.

"Why so, my daughter?"

"Because he always stares at me so when he meets me in the street."

"But, my child, how do yo know that Mr. Smith stares at you?"

"Why, Father, because I have repeatedly seen him do it."

"Well, Sarah, don't you look at the impudent man again when you meet him, and then he may stare his eyes out without annoying you in the least. Remember that it always takes two pairs of eyes to make a stare."

☞ Several notices of new publications, as well as some communications, have been necessarily deferred for want of room. We hope to bring up arrears next month.

MARKETS, &c.

Toronto, June 30th.

The market for the leading staples of Agricultural produce has declined within a few days. Wheat has fallen off to 10s., and poorer samples go at less. Flour has come down proportionally; it sells by retail as low as $9. Oats have fallen to 3s. 3d. and 3s. 6d. Potatoes may be had in large quantity at 3s. and 3s. 3d. Peas keep up; $1 is readily got for them. Hay $18 to $25 per ton.

The approach of harvest and the news of a slight decline in England has depressed the markets here.

We regret to find that the Hessian Fly is doing very serious damage where, until a few days, its presence was not suspected. We think, judging from our own observations, it will lessen the crop at least 20 per cent. in the neighbouring townships. In some western townships it is reported even worse This is a serious drawback, and will tend to keep up prices. In several of the western States a poor crop is expected, from the fly, weevil and other causes.

NEW YORK MARKETS

Flour—Heavy, and lower for inferior grades—demand limited—sales, 3,600 bbls, $8 and 8 62½ for common to choice State—$8.50 and 9.12½ for mixed to fancy Western—$11 and 12.75 for extra Genesee Canadian heavy—supply small—sales, 400 bbls, at $9.75 and 10.75.

Wheat— Quiet, and held above buyers' views.

Rye—Firmer; sales 155 bbls.

Corn—Without important change, and active—sales 40,000 bushels, at 83 and 93c. for mixed Western, closing at 92 and 92½ for shipping parcels.

Oats—Dull.

Pork—Market steady; sales, 300.

Thyme.—We have not seen any of this good old herb for years. Formerly every kitchen garden had a bed of it; indeed a garden was not thought complete without it, and every soup and bowl of broth was well seasoned with it. We used to raise it from the seed altho' it takes well from the root.—*Maine Farmer.*

GALLOWAY BULLS FOR SALE.

THE Subscriber will offer for sale at the Provincial Exhibition, to be held at Cobourg, 2 PURE BRED BULL CALVES, from imported Cows; also, 4 IMPORTED CHEVIOT RAMS, to be seen at the premises of the subscriber, near Cobourg.

WILLIAM RODDICK.

Cobourg, June, 1855. 7.

VALUABLE REAL ESTATE FOR SALE.

IN the Township of Vaughan, an excellent farm, a quarter of a mile west of the Richmond Hill Station, Northern Railroad, No 19 in the 4th concession, 18 miles from Toronto, 200 acres, 160 in a high state of cultivation, 40 acres of the best kind of timber, with a living stream of excellent water, 300 bearing fruit trees of best quality, the buildings good and commodious, one barn 70 by 40 feet, with stone stables by lane, one stable and driving house 40 by 30 feet with sheds—the house 40 by 38 feet, two stories, with good cellars. Dairy, ice-house, woodsheds and all other buildings necessary.

—ALSO,—

100 acres in the 5th concession No. 23 west half, 75 acres cleared and in an excellent state, 25 acres of the best wood, a new frame barn 60 by 35 feet, a log house, two wells of never-failing water. The farm is nearly all newly-fenced with 5 rails, and only 2 miles from the above station

—ALSO,—

60 acres in the 6th concession of Vaughan No. 24, with a frame house and a good saw-mill in excellent running order 20 acres of land cleared; this property rents for £75 a year.

—ALSO,—

100 acres in the Township of Innisfil, No. 13 in the 10th concession, three quarters of a mile from the Railroad This land is of the best quality and has good living water on it, the wood is of the first quality, and is valuable as it is so near the Railway.

Titles indisputable. Terms liberal For particulars apply to Daniel McDougal on Lot No 19, 4th concession Vaughan, or to Rupert's Post Office. (Post paid)

Vaughan, 20th June 1855. 7

DAVY'S DEVON HERD BOOK,

NOW ready, a LARGE SUPPLY of both 1st and 2nd vols. bound in one book, and containing all the subject connected with the Devon records, of both England and America up to the present time; also as a frontispiece, the beautiful engraving of the celebrated picture known as the "Quarely Testimonial" which is a full length portrait of Mr. Francis Quarely, now living, at 91 years of age. It is also illustrated with two animals, Prize-winners in England. Price, $5, can be had by enclosing the amount to B. P. Johnson, Cor. Sec. of N. Y. State Society, Albany, N. Y., Luther Tucker, Ed. of *Country Gent*, Albany N. Y., Sandford Howard, Boston, Mass., D. D. T. Moore, Ed. of *W. G. & S. Register* N Y., A. B. Allen, Ed. of *American Agriculturist*, N. Y., Saml. Sands, Ed. of *American Farmer*, Baltimore, Md., A. M. Spangler, Ed. of *Progressive Farmer*, Philadelphia, Pa., Lee and Redmond, Eds. of *Southern Cultivator*, Augusta, Ga., and Wm McDougall, Ed. of *Canadian Agriculturist*, Toronto, C.W. It gives me pleasure to state that Mr. Davy has solicited Mr. S. Howard, of the *Boston Cultivator*, to collect pedigrees and illustrations in this country for the 3rd. vol., and has authorised Mr. H. to obtain information as to any and all mistakes which may have been made as to the recording of American animals in Davy's 2nd. vol., and such corrections will be made in the 3rd. vol. The Plan proposes that a copy of all the pedigrees and illustrations collected by Mr. H, as the Editor in America, shall be forwarded to Mr. Davy, and a copy of those collected by Mr. D. will be sent to Mr. H. in this country. The whole matter will be published in America for our use, and in England for their use, by which means an American and English Devon Herd Book will be united, and the price reasonable, as the expense of English printing and duties will be saved. This concert of action has been brought about by Mr. Davy's good feeling and liberality towards this country; and I am only the instrument through which Mr. Davy acts; and from this time forth Mr. Howard will receive all communications on the subject, as will appear by reference to his advertisement.

All Editors who will give the above three insertions, will receive a copy of the 1st 2nd and 3rd vols.

L. G. MORRIS,

Agent for J. Farmer Davy's Devon Herd Book.

ENGLISH CATTLE
IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,

Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs. BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commission Charged.

Horse,	each,	$80
Bulls or ows,	"	60
Ram or Ewe,	"	30
Three Sheep from the same owner,	each,	2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner,	each,	22
Ten " "	" "	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses &c., as follows:

Horse,	each,	$40
Bull or ow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or ow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer provision for 20 days.

Horse,	each,	$35
Bull or ow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or wine,	"	18

Keep and attendance by Sailing Vessels provision for 60 days

Horse,	each,	$70
Bull or ow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and ol. Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased, by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

Breed.	Horse.	No. of Bulls required.	No. of ows required.	About the age required.	If to come by Steamer or Sailing Vessel	If insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

		£.	£.	£.
Thorough Bred Horses, from		1 00 to	2 10	12 00
Short Horn or Durham	Bull	4 00 "	150	7 00
Do	Cows	2 10 "	8 00	4 00
Do	yearling Bull	2 00 "	1 00	500
Do	do Heifer	175 "	4 00	250
Herefords	Bull	300 "	8 0	5 0
Do	Cows	2 00 "	6 0	250
Devons	Bull	3 0 "	800	4 0
Do	Cows	200 "	500	250
Ayrshire	Bull	150 "	3 00	3 00
Do	Cows	1 0 "	250	2 0
Alderney	Bull	150 "	225	175
Do	Cows	100 "	150	125

			Will weigh when killed and dressed	Will shear of washed wool
Cotswold Sheep	Ram	100 to	3 0 13 lbs 125	12to15lbs
Do	Ewe	25 "	100	30
Leicester Sheep	Ram	10 0 "	2 0 12 lbs 10 0	
Do	Ewe	20 "	80	25
South Down Sheep	Ram	100 "	3 0 112lbs 125	6 to 9lbs
Do	Ewe	25 "	100	30
Hampshire do	Ram	75 "	125 12 lbs 1 0	6to10lbs
Do	Ewe	15 "	25	25
Swine	Boars	25 "	50	40
Do	Sows	15 "	40	25
Merino Sheep from Spain				
Mules from Spain.				

5

THOROUGH BRED SHORT-HORNS.

THE Subscriber offers for sale, 3 Thorough Bred Short-Horn Durham Bull Calves, descendants of the celebrated Bull, "Bellville," champion of England, Ireland and Scotland

RALPH WADE Snr.
Spring Cottage, Hope.

May 22, 1855. 6—3t.

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture of Upper Canada, No 1, Vol 1st, pp 160 Toronto: printed and published by Thompson & Co., for the Board of Agriculture.

This work will be issued in quarterly parts, four of which will form a volume. The first part embodies the transactions of this Provincial Association from its institution in 1846, down to the commencement of the year 1851 The next number will contain an account of the further proceedings of the Association and the Board of Agriculture, Prize Essays, Abstract of County Reports, &c

The work will be sent free by post for 5s per annum All communications and remittances to be addressed to the Secretary of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855. 5.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at obourg in October next, that persons desiring to register stock should do so at an early date, as all animals for wh ch Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND. *Secretary.*

Office of the Board of Agriculture }
Toronto, March, 1855. }

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision

A man and three boys can turn out from 5, 0 to 10, 00 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,

Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to info m Agricultu ists and Ho ticultu tists, that they have received a large and varied asso tment of

FARM & GARDEN IMPLEMENTS

And would solicit a call from pa ties about to pu chase, at No. 77, co ne of Yonge and Adelaide streets, To onto They have on hand a quantity of the most imp oved Lap Furrow Ploughs, which have of late been so much in demand Reaping and Mowing Machines on the most imp oved p inciples, will be fo sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second, Bred by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds ; if grade, 5 s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (I 621 English Herd Book), was sold in 1853 for $4,000.

FREDERICK WM. STONE.

Guelph, April 24, 185 .

COMBINED REAPER AND MOWER.

Monny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught —the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground ; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $13 . We are also manufacturing Buroll's Reaper, price $120 ; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, May 6, 1855.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture Horticulture. Farm Mechanics*, and to the advancement of the *Farmers' interests generally* It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, beside Editoral and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributers to this journal.

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production* and asks no man's support under a false name. It is a true not a spurious *Canada Farmer*.

TERMS

Twenty copies or upwards, each - - - - - 2s. 6d.
Single copy - - - - - - - - - - - - - - 5s.

*** The *Agriculturist* is not liable to *Postage.*

☞ Newspapers inserting the above will do us a favour, and entilte themselves to a copy without exchange.

WM. McDOUGALL,
Publisher, Toronto.

PRINTED AT THE GLOBE OFFICE, 22, KING ST., TORONTO

THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VIII. TORONTO, AUGUST, 1855. No. 8.

Agriculture, &c.

TRIAL OF MOWING MACHINES.

As many of the Mowing and Reaping machines mentioned below have been or may soon be introduced into Canada we copy the following account of a trial of their qualities from the Rochester *Rural New Yorker*. We have this year tried Manny's Machine, which took the second prize, and also the Forbush machine. Both did excellent work, but we give the preference on account of its *adjustible* arrangement to Manny's. The one used by us was made in Canada by Messrs. Massey & Co., Newcastle:

In accordance with previous announcement, a trial of Mowing Machines was had June 27t , on the farm of Judge Buel, near this city, under the direction of the Monroe Co. Ag. Society. The weather was favorable and there was a very large attendance of farmers and others—almost every county in Western New York being represented We also noticed several farmers from Oswego, Jefferson and other distant sections of the State. Eight machines of six different patents, were entered in the following order:

1. Burrall's combined Mower and Reaper, by O. A. Swan, of Geneva.

2. Ketchum's Mower, by J. P Ross, Ogden.

3. Manny's combined Mower and Reaper, with Wood's improvement, by J. C. Cooper, Adams, Jefferson Co.

4. Manny's Mower, with Wood's improvement, by Mr Blackmer, Wheatland.

5. Wheeler's combined Mower and Reaper, by Shoulds & Mosher, Polar Ridge, New York.

6. Ketchum's combined Mower and Reaper, by J. Rapalje & Co , Rochester.

7. Forbush's combined Reaper and Mower, by E. D. Hallock, Rochester.

8. Russell's Mower, by R. H. Pease, Albany.

Though the ground was uneven, and grass light, several of the machines did good work. Ketchum's, and Manny's with Wood's improvement, probably attracted the most attention and commendation from spectators, though Forbush's, Burral's and Wheeler's machine cut well and had many admirers. The contest excited great interest from the large concourse present and it was evident that the "committee of the whole," were divided in opinion as to the merits of the respective machines. Each of the five machines above named, in particular, had its admirers among the practical men on the ground—and every man could give a reason for his preference. Russel's machine was not, apparently, in proper order to work on rough, uneven ground. A large number of machines, of different patents, were ordered during and at the close of the trial, and before the decision of the Committee was announced. Indeed, we have little doubt that, under favorable auspices with smooth ground and good grass—nearly, if not all, the machines exhibited would do fair work.

REPORT OF THE COMMITTEE.

The trial of Mowing Machines, under the direction of the Monroe County Agricultural Society, took place on the farm of Judge Buel near this city, on the 27th inst. The occasion called out a very large collection of farmers, manufacturers, and others who were curious to witness the scene of strife between the various parties from different parts of the State, who appeared on the ground to test the merits of their several machines. The Committee appointed to judge of the merits of the work done, found it very difficult to arrive at just conclusions as to the work performed, and the merit due to the different machines on trial, each probably possessing some advantages peculiar to itself, and whatever decision the Committee have arrived at, the great and important question is decided by the intelligent farmers who witnessed the contest.

There were eight machines entered for competition The field was bad for working them, the surface very uneven and stony, and the grass thin and light. The work performed was not a fair test of the value of mowing machines, yet, with some exceptions, the work was satisfactory, and proved the great value of this immense labor saving invention.

The Committee were united in the opinion that the Ketchum machine, and the Manny with Wood's improvement, were the best on the ground ; but were divided in opinion as to which of these two was the

best, but a majority finally decided in favor of the former, believing that that machine cut the closest to the ground, while the latter was the easiest for the team and for adjustment over uneven and stony surfaces.

The first premium the Committee awarded to Ketchum's machine, and the second premium to Manny's machine, with Wood's improvement.

The Committee had not the time to examine minutely the mechanical construction of the different machines, or their liability to get out of order, both important points upon which the Committee expressed no opinion.

Ketchum's machine was entered by James P. Ross, of Ogden, and cost $110, and another by John Rapalje & Co, a combined Reaper and Mower, costing $125.

The Manny machine with Wood's improvement, entered by Mr. Blackmer, of Wheatland, cost $110 The same machine with reaper combined, entered by J. C. Cooper cost $125.

The third premium is awarded to Wheeler's machine, of Cayuga Co., costing $125. This machine cut with shears and performed good work, having an adjustable beam, and so arranged as to have little or no side draught,

Forbush's machine, entered by E. D. Hallock, of Rochester, is a combined Reaper and Mower, and cut equally well; did not leave the grass evenly spread This machine cost $110, and with the reaper $130.

The other machines upon the ground were most of them so nearly alike in the character of the work done, that any further discrimination or expression of opinion of their respective merits is perhaps uncalled for.

F. P. Root,
Benj. Smith,
James Waring,
William Brown,
Alex. Kelsey,
Committee.

Rochester, June 27, 1855.

THE APPROACHING PROVINCIAL EXHIBITION.

The readers of this Journal are doubtless already aware that the next exhibition of the Provincial Association will be held at Cobourg, October 9, 10, 11 and 12. A convenient and beautiful site has been selected for holding the Fair, (the same as on a former occasion) and every thing at present seems to indicate a successful result. The contract for fencing erecting buildings &c, has been taken and preparations commenced. An efficient Local Committee has for some time been actively engaged in the important work of preparation. The following are the names of the Committee of Cobourg. Sheriff Ruttan, *Chairman;* Asa A. Burnham, *Treasurer;* Henry Jones Ruttan, *Secretary;* Sir Edward Poore, Bart, John Wade, D. E. Boulton, Alex Alcorn, G. E. Castle, Thos Ewre, Walter Riddell, R. Wade, Junr., C. H Morgan, O. W. Powell, P. R. Wright, F. Burrell, W. Weller. We call the attention of our readers to the following

RULES AND REGULATIONS.

1. The payment of 5s. and upwards constitutes a person a member of the Agricultural Association of Upper Canada for one year; and £2 10s for life, when given for that specific object, and not as a contribution to the local funds.

2. No one but a member will be allowed to compete for prizes except in classes 30, 32, 34 and 35.

3. All Entries must be made on printed forms, which may be obtained of the Secretaries of Agricultural Societies, free of charge. These forms are to be filled up and signed by the exhibitor, enclosing a dollar for membership, and sent to the Secretary of the Association, Board of Agriculture, Toronto, on or before Saturday Sept 22nd, after which time a charge of 5s will be imposed on each article.

Exhibitors in the Horticultural and Ladies Department may enter articles up to Tuesday Evening, Oct. 9th, when the Books will be finally closed.

Blood Horses and Thorough-bred Cattle must be entered and have their full Pedigree properly attested and sent to the Secretary in Toronto, not later than Saturday, Sept. 22nd No animals will be allowed to compete as pure breed, unless they possess regular Stud and Herd Book pedigrees, or satisfactory evidence be produced that they are directly descended from such stock.

4. Badges from the Treasurer's Office will be furnished each member, which will admit himself only, free to every department of the Exhibition, during the Show. Life members admitted free.

5. Tickets of admission to those who are not members, 7½d each time of admission. Carriages, including drivers, 5s; passengers to pay 7½d each. Horsemen to pay 1s 3d each admission.

6 Every article exhibited for competition must be the growth, produce, or manufacture of Canada, except Classes 34 and 35. Live Stock for breeding must be the property of persons residing in Canada. All premiums for articles, except Stock, are to be awarded to the manufacturers or producers only.

7. Discretionary Premiums will be awarded for such articles as may be considered worthy by the Judges, although not enumerated in the List, and the Directors will determine the amount of premium.

8 In the absence of competition in any of the Classes, or if the Stock or articles exhibited be of inferior quality, the Judges will exercise their discretion as to the value of the premiums they recommend.

9. The Judges, Competitors, and Officers of the Association only will be permitted to enter the Show Grounds until 12 o'clock, on Wednesday Oct. 10 h, at which hour Members will be admitted. Non-members will be admitted on Thursday and Friday mornings after 8 o'clock.

10. No Articles or Stock exhibited will be allowed to be removed from the grounds, till the awards are made, without the permission of the President, under the penalty of losing the premiums. An Auctioneer will be on the spot after the premiums are announced and every facility afforded for the transaction of bnsiness.

11. Delegates, Judges and Members of the Press, are requested and expected to report themselves at the Secretary's Office immediately on their arrival.

12. The Judges are to meet at the Secretary's office on the Grounds on Wednesday morning, at 9

o'clock precisely, to make arrangements for entering immed ately upon their duties.

13. Arrangements will be made for Agricultural Lectures or Discussions during the evenings of Wednesday and Thursday on the Show week.

14. While the Directors will take every possible precaution under the circumstances, to ensure the safety of articles sent to the exhibition, yet they wish it to be distinctly understood that the owners of the articles must themselves take the risk of exhibiting them; and that should any article be accidentally injured lost or stolen, the Directors wi l give all the assistance in their power towards the recovery of the same, but will not make any payment for the va ue thereof.

15. The Treasurer will be prepared to commence paying the premiums immediately after the successful competitors have been declared, and parties who shall have prizes awarded them are particularly requested to apply for them before leaving Cobourg, or leave a written order with some person to receive them, stating the articles for which prizes are claimed.

The Local Committee will make arrangements with Steamboat and Railway proprietors for carrying the passenge s at reduced rates; also with the Hotel and Boarding house Keepers, for accommodating visitors at their ordinary fixed charges. Full particulars will be published hereafter in Show Bills.

Short Horn Stock in the County of Wellington.

We gladly insert the subjoined extract from a recent member of the *Guelph Herald*. That country has h d from the first a goodly number of intelligent and enterprising settlers from the mother country. We shall always remember with pleasure attending a Farmer's Dinner at Guelph, a few years since, when we were s ruck with the appearance and spirit of the company, so characteristically British. We could imagine ourselves again in merrie England, and blessed our stars that we were in a country so marvellously like it. At that time it would have been preposterous to have mooted even the probability of Guelph being a place for holding our great Provincial Exhibition, as it could be reached only by ordinary roads. But how soon do railways change the state of things! We are quite sure that whenever the Association may decide on holding the annual Show in Guelph, the merchants and inhabitants of that town, and the farmers and mechanics of the County of Welington and adjoining districts, will nobly sustain it.

The County of Wellington has for several years occupied a prominent place among those districts of the Province that boast the possession of superior agricultural stock, for which honorable position she is chiefly indebted to the energy and ability of a number of skilful and en erp ising proprietors in the townships adjoining her capital, w hich ably seconded by the local agricultural societies. We have frequently had the pleasure of chronicling the arrival of superior animals selected from the herds and flocks of first class English breeders, and the sale of their progeny at what would even in the "old country," be reckoned high prices. Recently our fellow townsman Mr. F. W. Stone, has acquired no small distinction as an importer and breeder of Short Horns," and three animals shown by him at the County Show in October last although only imported the previous week, and consequently in poor condition, attracted general admiration, and were regarded by our best judges as l kely to prove essentially beneficial in improving the stock of the vicinity. We are gratified to learn, as evidence that the value of superior stock is fully appreciated in the neighborhood, and that our judiciously enterprising farmers may safely calculate on a fair renumeration for the money and labor expended in breeding first-class animals, that Mr. Stone has sold a heifer calf, four months old, the produce of a heifer imported by him last fall, to Mr John Iles, of Farnham Pla ns, Puslinch, for $500, the largest sum, so far as we are aware, ever paid for a calf in the Province. We have not seen this "golden calf," but we feel persuaded it must be a beauty, for Mr Iles is reckoned one of the best judges of stock in the county.

Mr Stone's herd, which may now, as regards quality, compare favorably with any in the Province, comprising over twenty Short Horns of the very highest class, kept in first rate condition, is a credit to himself, to his manage r, and to the county. In addition to four splendid heifers imported by him this spring, he has at present *en route* for Canada about a score of superior Cotswold Sheep, to be followed by a further importation of carefully selected Short Horns. The introduction of so much pure and fresh blood, combined with Mr Stone's very liberal arrangements for the accommodation of his neighbors, must obviously be largely beneficial to the locality.

While on the subject, we are induced to ask whether the Directors of the Provincial Agricultural Association are not likely soon to direct their attention to Guelph as an admirable site for one of their early exhibitions? Our two lines of railroad now on the eve of completion, will render the locality A 1 as regards transit accommodation. We are situated in the very centre of the finest and best cultivated district Canada can boast, possessing some of the best farmers and best conducted agricultural societies in the Province; and, from the astonish ng rapidity with which the town is increasing, we will soon be able to accomodate a few thousand guests within new stone walls. The Town and County Municipalities, we are persuaded, would subscribe handsomely to the prize list; the citizens would make up a heavy purse; and our farmers, who are at present actually overburdened with cash they don't know what to do with, would astonish the Province by their liberality for such a purpose. We trust the Hon. A. Fergusson, Mr. Harland and o her friends of "the centre of creation" at the Board of Agriculture, will exert themselves in this matter; we dare pledge ourself they will be well supported by the county.

Reaping Machines.—We have been informed by a manufacturer of agricultural implements, one who is excellent authority, that between fifteen and sixteen thousand reaping machines will be manufactured and sold this year in our country. The demand is so great that manufacturers cannot make them fast enough for their orders. This affords evidence of agricultural prosperity, as the cost of these machines will amount to nearly two million of dollars. Our farmers exhibit wisdom in using and patronizing machinery. A reaping machine will save the price of itself in one season.—*Scientific American.*

SCOTTISH AGRICULTURAL WORTHY.

GLENTHORN, (NEAR COBOURG), June 28, 1855.

DEAR SIR,—Permit me to request the favor of you to give the inclosed a place in the *Agriculturist*. —Mr. Brodie was an old neighbour and a much esteemed friend of mine, as well as the other persons mentioned, who were either relatives or intimate friends of mine, I am sorry to say they are all gone. There may be Scotchmen settled in Canada who may feel interested and be glad to read the inclosed

I am, Sir Yours faithfully,

WM BROWN.

To Professor Buckland, Toronto.

It is impossible to estimate too highly the obligations the agriculture of Scotland owes to those intelligent and perseveri g men who at the commencement of the present century occupied as tenants some of the farms of East Lothian. One—we believe the last of these Mr. John Brodie, Abbeymains, has lately died at the ripe age of 75. Eminent as a practical farmer, Mr. Brodie earned a wider fame by the evidence he gave before the select committee of the House of Commons, appointed in 1826, to inquire into the then prevalent complaints of agricultural distress. That committee, as is well known, made no report, but the evidence taken sealed the fate of the Corn Law, though for ten years later that monstrous injustice remained on our Statute Book.

Mr. Brodie's evidence, with that of Mr. Andrew Howden and Mr. Robert Hope furnished some of the most decisive arguments urged against the Corn Laws, and demonstrated that the distress complained of was due to an erroneous system of husbandry which the Corn Law had encouraged and served to perpetuate. Mr. Brodie's evidence seems to have given offence to the landlord of his farm of Amisfield Mains; who refused to renew his lease, though Mr. Brodie had continued to improve by draining and manuring up to the close of his term in the full expectation of a renewal. When the lease expired in 1839, the farm was let to another tenant, the landlord profiting of course by Mr. Brodie's improvements. Of this, no doubt the law permitted, but the effect on the tenantry of the district was to create feelings of distrust and dissatisfaction.

We take from a memoir contained in the *North British Agriculturist*, a few passages of general interest. The writer says :

"Of all the great men who appeared in East Lothian towards the close of the last and beginning of the present century, and who shed a lustre over its agriculture none was more conspicuous or eminently instrumental in advancing agriculture than John Brodie. Entering the arena after Andrew Meikle had invented the thrashing machine—Lee of *Skaetraw* had introduced the Swedish turnip, and, with Remie of Phantasie, had adopted the four-course rotation, John Brodie, along with Brown of Markle, Adam Bogue of Linplum, Robert Hope of Fenton Barns, and James Reid of Drem, followed out every improvement in practice, and established on systematic basis the agriculture of that country, which has influenced and is still influencing, the whole character of Scottish husbandry.

In the year 1801 he entered on the occupancy of the farm of Fenton, on a lease of twenty-one years, at a rent of £1,050, and which rent he continued to pay till the close of the lease. The occupancy did not prove a lucrative one, as the farm at entry was in very bad order, and it was only towards the close of the lease that full crops were raised. This was effected principally by importing annually at Aberlady several cargoes of manure from Leith, a vessel being owned by him for the purpose. The quantity of manure so brought to the farm was at the time deemed extraordinary.

In 1820 he took a lease for nineteen years of Amisfield Maine Farm, near Haddington, to which he removed for the greatest convenience of educating his family. When the lease of Fenton Farm expired, the proprietor refused to let it to a non-resident tenant.

In 1826, he took a lease of nineteen years of Abbeymeins which was renewed by the proprietor Lord Blantyre. The change which a course of high cultivation can effect on the most unpromising soils, especially where the climate is favourable, has been nowhere more strikingly displayed than at Abbymains. Those who were familiar with this farm prior to 1830, and, who remember the cold, thin, clay fields of the upper part of the farm, and the weeping and weak looking soils of those fields, through which the public road between Haddington and Dunbar passes, know what has been effected. Those not so acquainted with the farm at that time can form a very inadequate idea of what has been accomplished. The crops from being among the lowest average per acre in the county have for several years been among the highest, and the produce in grain and in roots equal to any farm in the same space in the United Kingdom. This change has been produced by the skill and capital of Mr. Brodie, a portion of the latter being, however, borne by the landlords by contract on entry.—The outlay in permanent improvements, draining, sub oiling, &c, and in manures, has certainly exceeded the original value of the feesimple of the soil. That the occupant reaped, and his friends will continue to reap the benefit of such improvements, is unquestionable ; but had Mr. Brodie been equally unfortunate, as to a renewal of the lease, in this as in the previous farms, much of his skill, enterprise, and capital would have been expended upon improvements, the benefits of which others would mainly have reaped. . . . . In Amisfield Mains, he was engaged in extensive draining operations, up to the second year of the expiry of his lease. The increased value imparted to the soil during his occupancy, both of Amisfield and Abbeymains, would of itself have proved a full return for his exertions, had he purchased the land previous to farming it, but farming the soil owned by others, neither skill, capital, nor honourable bearing protected him from the common fate of occupying tenants, his very position as an improving farmer being rather a disadvantage than otherwise."

Mr. Brodie's peculiar merits as an agriculturist are thus stated :—

"He was rather a pioneer than a follower, although with too sound a judgment to pursue novelty for its own sake. As an improver and as a cultivator, the same characteristic of patient perseverance was exhibited. Once resolved to undertake any improvement, he went straightforward undaunted by obstacles, and keeping steadily in view the object aimed at in the execution of any undertaking, whether in completing the draining of a field, or in preparing for, or in sowing a crop, patience in waiting for a suitable *tid*, and dilligent perseverance when the weather was suitable, were alike the subject of remark. Scrupulously attentive to eradicating all weeds, such as couch and knot grass, on their first

appearance, he spared no expense to effect this. Keeping the land free from weeds and frequent applications in moderate doses of fertilisers, such as farm, town and portable manures, were the leading features of his practice. His minute attention to the details in the field exercised no considerable influence in improving the practice of those farmers, who going to and from the weekly market at Haddington, had the opportunity of witnessing the operations in progress, and strangers from a distance who came to examine into the advanced practice of the county invariably formed a highly favorable opinion of his general management. As a breeder and a feeder of stock, he was pre-emenint. Those who are familiar with the premium lists of the Highland and East Lothian Agricultural Societies, must have observed that no name occurs so of ten as a successful competitor as that of John Brodie, while his essays on various subjects are recorded in their transactions, and are valuable expositions of his practice, particularly as a successful feeder of stock. The number of premiums taken by Mr. Brodie was certainly greater than that of any other farmer in Scotland."—*London Economist.*

GROW YOUR OWN CLOVER SEED.

We are acquainted with intelligent practical farmers in Western New-York, who believe it profitable to seed down *all* their wheat and barley land every year with red clover. A well known and successful cultivator of light land, near Rochester, has abandoned altogether, the use of the summer fallow, depending on corn and other hoe crops to enable him to keep the land clean. After corn he frequently sows barley, seeding it down with 10 lbs. of clover per acre, and, in the fall, after the barley has been harvested, the clover affords good pasture for sheep or cattle, or, if feed is abundant, it is allowed to grow uncropped, and is turned under, the same fall, and the field sown with wheat on one furrow He is satisfied that the value of the feed in the fall and the fertilizing effect the clover roots, &c., have on the subsequent wheat crop, more than pay the cost of the clover seed. Others are convinced that, where corn is to follow, it is highly profitable to seed down a wheat or barley crop, with clover, and allow it to get a good start the next spring before the land is plowed up for the corn crop. The clover, also, in this case furnishes much fertilizing matter, and the practice has the additional advantage of furnishing green food for the grubs and worms till the corn has attained a good start, and is capable of sustaining their depredations without material injury.

It is possible that, under such a system, the land may in time become exhausted—not of potash, soda, or lime or of sulphuric or phosphoric acid, but of some peculiar combinations of these or other elements of plants which, as yet, neither the chemist in his laboratory, nor the experimenter in the field has been able to discover. In other words, our fields, like the light soils of England under the four course system of rotation, may become "clover sick," and refuse to grow red clover oftener than once in eight or twelve years. But, at present, we apprehend no such a result. We believe clover sickness is unknown in this country, and should be glad to hear from our correspondents on this point. Our object is rather to commend the extensive cultivation of clover, and to recommend the systems alluded to, or a modification of them, to those who have hitherto seeded down, at most, only a portion of their wheat or barley crop with clover. Be assured that, on all farms where wheat, corn, barley, oats and other cereal grasses are extensively cultivated, *it will abundantly pay* to grow as much clover as possible.

Why clover, peas, beans, tares, sainfoinilupins and other leguminous plants are so advantageous in rotation with wheat, barley, oats, Indian corn and other graineous plants, we will not now stop to inquire. The fact that they are so cannot be denied, and whether it is owing to their requiring a different proportion of mineral substances, or whether, principally to the fact that they do not require for their growth more ammonia than they contain, while the wheat, corn, and other plants of the same order destroy large quantities of this expensive fertilizer, is a question which it is not necessary to decide before we can act upon the teachings of experience.

In order to induce farmers to sow more clover, it is very important that they be persuaded to *grow their own clover seed;* for it will be admitted that he who has to pay $5 to $8 per bushel to the city merchant or seedsman will be much more sparing of clover seed than the farmer who raises an abundance of his own. Fortunately this climate is not only well suited to the growth of large crops of clover for fodder, or for turning under as a fertilizer, but it is also well adapted for the production of large crops of excellent clover seed. Why, then, is it so high? why is it that every farmer, does not raise at least as much as he needs for his own use? There is certainly no more necessity for buying clover seed, than there is for buying seed wheat, corn, barley or oats.

If not already done, let every farmer select a few acres of his cleanest clover, cut it as early as possible, and then allow it to go to seed. If the land is in good heart, and clean, nothing more is required; if poor, 150 to 200 lbs. of good Peruvian guano per acre sown broadcast as soon as the first crop is removed, during showery weather, will be found a beneficial, and we have little doubt a profitable application. Plaster increases the foliage of the plants, but, it is said, retards the ripening of the seed. Four bushels of clean seed per acre is a fair, average crop; but eight bushels may easily be grown by cutting the first crop early, or by eating it off by sheep till the middle of May or first of June. If the land is not rich enough it should be well manured, early in the spring or, still better in the fall, with well rotted barn-yard dung. It is important to have the clover as early as possible, since it is frequently injured by frosts in the autumn After the seed is matured, however, *frost does not hurt it;* and, now that we have several excellent machines for taking off the heads of clover seed, thus avoiding the expense and labor of curing the clover in cool wet weather, it may be left out late in the fall without any loss or inconvenience.

We repeat, and we would that every farmer in the country could hear us, *grow your own clover seed,* and never, without special reason, sow a field of wheat or barley without seeding it down, in the spring, with from 10 to 15 lbs. of red clover per acre. We believe it will pay, even though the clover sod is plowed up the next spring. We will add, too, that, where plaster can be had for less than $5 per ton, and where experience proves it good for clover, the practice of sowing a bushel of plaster per acre *at the time of sowing the clover seed,* is worthy of extensive adoption. We think it of great benefit in enabling the young clover plants to stand the drouth.—*Country Gentleman.*

When pinks are in flower, their beauty may be prolonged by giving them a little shade at mid day.

GRECIAN FARMERS.

Professor Felton, of Cambridge, (Mass.) in a lecture on "Life in Greece," gives the following interesting description of rural life among the ancient Greeks.

The love of rural life was one of the deepest passions of the Grecian heart, beyond the realm of na-Arcadia, real or ideal. What lovely touches of ture adorn with their exquisite beauty the dialogues of Plato and even the comedies of Aristophanes. Through the whole compass of Greek literature, the sights and sounds of the country, the sweet, calm sunshine, the fleecy cloud, the song of the lark and the nightingale, the rising sun, the rich meadow, the cattle feeding in the pastures, furnished thoughts which moved harmonious numbers. When the Peloponnesian war opened, the plains of Attica were covered with residences, elegantly furnished, which the inhabitants with regret and tears looked back upon from the walls of the city, while the Spartan armies were laying all waste with fire and sword. The country was tastefully decorated with little temples or chapels, consecrated to the nymphs and rural deities; and the lands were made holy ground, because in them were buried the ancestors of the families residing in the mansions.

The Greek gardens were laid out with lawns groves, thickets and avenues; while fountains fed meandering rivulets. Beds of asphodel, hyacinth and violets, roses, myrtles and pomegranates diversified the scene, or wafted perfume to the senses Here Athenian taste and luxury displayed itself, The Greek as a farmer or city gentleman, is not the Greek of classical associations; and yet, perhaps, just in these relations, he was most intensely Greek.

Homer gives a lively sketch of the primitive country life. Hesiod was a Bœotian farmer, and gives precepts which seem to have been drawn from his experience, concerning lucky and unlucky days, weather, &c. The early Greek philosophers carefully observed the phenomena of the heavens, and were skilled in the arts of the season. The habits of animals, the properties of soils and their adaptation to different kinds of crops, were matters of which they knew. Wagons, carts, plows and harrows were manufactured on the farm or in its vicinity, and the wood used was chosen with care. Corn was ground in a mortar with a pestle, and in later times in a mill. The list of other implements, such as scythes, saws, spades use of guano, sea-weed, and commoner substances, was perfectly understood. Land was allowed to recover its strength by lying fallow. Scare crows were set up in the fields to scare away birds: though a "spell" was also used, viz:—having caught a toad they carried him around the field by night alive, and then put him in a jar, sealed him up, and buried him in the middle of the ground when, this representative enemy was buried, the seed was supposed to be safe from enemies. The value of hay was well understood. The time for mowing was carfully determined, and the hayricks made with due precautions against both damp and spontaneous combustion. When the time of harvest came, the laborers of Athens ranged themselves round the agora and waited to be employed by the farmers.

The grain was separated from the straw by horses oxen and mules, in a circular threshing floor usually placed on an eminence in the open field. A pole was set up in the centre, and the cattle fastened to it by a roap reaching to the circumference. They moved round it until they were brought up at the centre by the winding up of the rope, and were then turned into the opposite direction till it was unwound. Sometimes a rude threshing machine, toothed with stones or iron, or a flail, was employed. In Homer's time a winnowing machine was used also. When the harvest was completed, the event was celebrated by a festival in honor of Demeter and Dionysius, at which cakes and fruit alone were offered.

The culture of the vine was a subject of importance, and the selection of a spot for a vineyard, the direction of its exposure the effects of climate and particular winds, were sedulously considered. Hedging, weeding, setting out slips the treatment of the vine were all described by writers before the time of Virgil. The appearance of a vineyard-composed of tree climbing vines, is beautifully described by Mr. St John, the trees being ash, popular, maple or elm, and planted one row above another on a declivity, with the lower branches cut off; the vine climbed thirty to sixty feet, according to the depth of the soil, and running out on the high branches arched from tree to tree, or on bridges of reeds.

A series of lofty arches was thus created, beneath which the breezes could freely play, abundant currents of pure air being regarded as no less essential than constant sunshine to the perfect maturing of the grape. The fruit was kept fresh or made into raisins. It would be endless to attempt a description of all the fruits and the methods of raising them. Cider and perry were made from apples and pears. The olive was perhaps most extensively raised, as its oil was used for lights and as the basis of cookery.

The farm yards had their noisy tenants. Geese and ducks often waddled into the kitchen, in one corner of which might be heard the comforting sounds of the occupant of the pig-stye. The art of enlarging the goose's liver for epicures was well known to Greek and Egyptians. Hearths, furnished with roots, were attached to the kitchen so as to received its smoke, which was supposed to be agreeable to barndoor fowls. Pigeons, peacocks, pheasants, guinea-hens, &c., were to be found at the establishment of wealthier farmers. The laboring animals were much the same as now, except that the horse was comparatively more uncommon in the working of the farm, being reserved for the chase, war, &c. The arrangements of a Greek dairy were much like ours, and though butter was little used in the classical ages, yet cheese was universally eaten, generally while fresh and soft. Milk was sold in the Grecian markets by women, and it frequently reached the customer in milk and water. A method used for detecting the cheat, was to drop a little on the thumb-nail; if the milk was pure it would remain in its place,—if not it would flow away.

Maxims for Young Men—Never be idle; if your hands cannot be usefully employed, attended to cultivating your mind. Drink no intoxicating liquors. Always speak the truth. Keep good company. Make few promises. Live up to your engagements. Keep your own secrets. When you speak to a person look him in the face. If any one speaks evil of you, let your life be so virtuous and upright that none will believe him. You had better be poisoned in your own blood than your principles. When you retire, think what you have done during the day. Your character cannot be injured except by your own acts Keep yourself innocent, if you would be happy.

Incorporated Drainage and Land Improvement Company of Upper Canada.

The Act of Incorporation of this Company, passed during the last session of Parliament, we publish for the information of our readers. The objects contemplated are of the most important description, and every encouragement should be given to any well digested and practicable scheme for facilitating works of drainage and sewerage upon which so materially depend the wealth and salubrity of the country. Companies of this kind have been formed of late years in the United Kingdom, and they have been attended with a large measure of success. Finally the time has arrived when something of this sort should be attempted in Canada. We ask the best attention of our readers to the subjoined Act, and our pages will always be open to communications on the subject. We understand that the preliminary conditions of the Act have been complied with and that Stock-Books will be opened immediately at all the Branches of the Bank of Upper Canada. It must be evident that an enterprise of this nature requires the prompt attention and liberal support of all that are friendly to the agricultural and general improvement of the country :—

AN ACT TO INCORPORATE THE GENERAL DRAINAGE AND LAND IMPROVEMENT COMPANY OF UPPER CANADA.

Whereas land is capable of being greatly increased in productiveness and value by works of Drainage and other permanent improvements: And whereas the sanitary condition of Cities, Towns and Villages is greatly advanced by sewerage, water supply and other operations: And whereas the more general extension of such works tends to prevent and remove epidemic and other diseases, and to improve the public health, and it is therefore expedient to encourage and facilitate such operations by all fitting means, and particularly by the application of Joint Stock Capital and collective enterprize; And whereas the provisions of the Act passed in the Session held in the thirteenth and fourteenth years of Her Majesty's Reign, intituled, "An Act to provide for the formation of incorporated Joint Stock Companies, for Manufacturing, Mining, Mechanical and Chemical purposes," and also of the Act passed in the sixteenth year of Her Majesty's Reign, to amend the same, are of limited application and insufficient for the several operations herein contemplated: Be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and of the Legislative Assembly of the Province of Canada constituted and assembled by virtue of and under the authority of an Act passed in the Parliament of the United Kingdom of Great Britain and Ireland, intituled, "An Act to re-unite the Provinces of Upper and Lower Canada, and for the Government of Canada," and it is hereby enacted by the authority of the same, as follows:

1. From and after the passing of this Act, the following parties: Sir Allan N. MacNab, M. P. P., of Dundurn, The Honorable William Cayley, M. P. P., of Toronto, S. B. Freeman, Esquire, M. P. P., of Hamilton, Sir Edward Poore, Baronet, of Cobourg, E. Cartwright Thomas, Esquire, of Hamilton, Charles P. Treadwell, Esquire, of L'Original, President of the Provincial Agricultural Society, George Buckland, Esquire, of Toronto, Secretary of the Board of Agriculture, E. W. Thomson, Esquire, President of the Board of Agriculture, R. L. Denison, Esquire, of Toronto, J. B. Marks, Esquire, of Kingston, Thomas C. Street, Esquire, M. P. P., of Niagara, Hugh C. Baker, Esquire, of Hamilton, J. T. Gilkinson, Esquire, of Hamilton, William Matthie, Esquire, of Kingston, the Honorable Adam Fergusson, of Woodhill, George B. Alexander, Esquire, of Woodstock, William Balkwell, Esquire of London, Hugh Barwick, Esquire, of London, William Niles, Esquire, M. P. P., of London, E. M. Simons, Esquire of Hamilton, J. S. Wetenhall, Esquire, of Hamilton, Secretary of the County Agricultural Association, J. B. Askew, Esquire, President of the Agricultural Society of Middlesex, John Harland, Esquire, of Guelph, S. C. Ruttan, Esquire, of Cobourg, David Christie, Esquire, of Brantford, W. L. Distin, Esquire, of Hamilton, and such other persons as shall become Shareholders in the undertaking hereinafter mentioned, and their successors in perpetuity, shall be and are hereby constituted and incorporated a Joint Stock Company under the style and title of "The General Drainage and Land Improvement Company of Upper Canada," for the purpose of undertaking and executing within limits of Upper or Western Canada, all such works of drainage, irrigation, clearing, fencing, building, road-making, and other permanent improvement of land, as well as all works of sewerage, water supply, sewerage application and other sanitary operations, as they shall be called upon to undertake by the owners of land or the Municipal authorities of Counties, Townships, Cities, Towns or Villages, or other persons or bodies corporate.

II. The capital of the said incorporated Company shall be one hundred thousand pounds divided into ten thousand shares of ten pounds each, with power from time to time, at the discretion of the Directors, and with the concurrence of the majority in value of the Shareholders, to increase the said capital to two hundred and fifty thousand pounds, by an issue of fifteen thousand additional shares of ten pounds each either at par value or at such premium as the Directors shall think proper.

III. The affairs of the said Company shall be managed by a Board of eleven Directors, any six of whom shall be a quorum, and the following shall be a first Board, namely: Sir Allan N. MacNab, The Honorable Adam Fergusson, Samuel Black Freeman, George Buckland, Hugh Copart Baker, Jasper T. Gilkinson, James S. Wetenhall, Edward Cartwright Thomas, George T. Denison, John B. Marks, and William L. Distin, who shall hold their office until others shall under the provisions of this Act be elected by the Shareholders, with power to open Stock Books and call a meeting of Stockholders as hereinafter provided.

IV. The said Directors are hereby empowered to take all necessary measures for opening the Stock Books for the subscription of parties desirous to become Shareholders in the said Company.

V. When and so soon as two thousand five hundred shares of the said Capital Stock shall have been subscribed and ten per cent. shall have been paid in thereupon, it shall be lawful for the said Directors or a majority of them, to call a meeting of the holders of such shares at such place and time as they shall think proper, giving at least fifteen days, public notice of the same, in one or more newspapers published in the City of Hamilton, and the Canada Gazette, at which meeting and at the Annual

General Meeting in the following section mentioned, the Shareholders present, either in person or by proxy, shall proceed to elect eleven Directors in manner hereinafter mentioned, which said eleven Directors shall hold office until the first Monday of June following.

VI. On the said first Monday in June, and on the first Monday in June in each year thereafter, or on such other day or place as shall be appointed by any By-law, there shall be chosen by the Shareholders eleven Directors, and public notice therefore shall be published one month before the day of election in the Canada Gazette, and one or more such newspapers, as aforesaid; and all elections for such Directors shall be by ballot, and the persons who shall have the greatest number of votes at any such election shall be the Directors, and if it shall happen that two or more shall have an equal number of votes, the Shareholders shall determine the election by another or other votes, until a choice is made: Provided always, that no one holding less than thirty shares shall be qualified to be a Director.

VII. It shall be lawful for the Directors to call upon the Shareholders for such instalments upon each share which they or any of them may hold in the Capital Stock of the Company, in such proportions as they may see fit, so as no such instalments shall exceed ten per cent., giving one month's notice of each call in such manner as they shall appoint.

VIII The several clauses of the Railway Clauses Consolidation Act, with respect to Directors, their election and duties, shares and their transfer, and shareholders, shall be incorporated with this Act, and shall apply thereto, and to the undertaking herein mentioned, in such and the same manner as if the same had been herein re-enacted, and shall be included by the expression "this Act," whenever used herein.

IX. The said Directors shall appoint a Chairman and Deputy Chairman from their own body, and also a Secretary, an Engineer in Chief, and such other officers as from time to time may be requisite, and shall make such By-laws as they shall deem proper for the management of the stock and affairs of the Company, for prescribing the duties of their officers and other matters connected with the proper management of the business and affairs of the Company, and copies of such By-laws certified by the Secretary of the Company and under its Corporate Seal, shall be *prima facie* evidence of such By-laws in all courts of law and equity in this Province.

X. In pursuance of the authority herein given, the Company shall have all power, liberty and license to contract for, execute and perform all works of trunk, arterial, surface and subsoil drainage, of sewerage, water supply, the collection and distribution of sewerage, and other refuse in Counties, Townships, Cities, Towns and Villages, the clearing reclaiming, fencing, grading, and irrigating of land, and for such purposes to construct, erect, work and maintain all houses, homesteads, tileries, kilns, steam engines, water wheels, embankments, sluices, reservoirs and roads, and to do and perform all and singular such other works and things not herein enumerated, as may be needful or convenient for properly and effectually carrying out all or any of the operations hereby authorized to be done.

XI. When owners of land or the authorities of Counties, Cities, Towns and Villages shall desire to avail themselves of the powers of the Company for the execution of all or any of the works herein authorized to be done, the Company shall, on application from such owners or authorities for their approval and concurrence, when a contract shall be entered into for the due performance of the work, which shall be binding on all parties. The Company may require from such owners or authorities security for payment to the Company of such sum for preliminary expenses as shall defray the actual cost thereof if no contract for work is entered into; but if a contract be concluded between the parties those expenses shall be included in the amount of the contract.

XII. In all operations undertaken by the Company, it shall be lawful at the option of the owners of lands, or authorities of Cities, Towns or Villages, for the said Company to extend the payment of the cost of the works over any period to be agreed upon between the parties, not exceeding twenty years, and to receive the same by such yearly, half yearly or quarterly instalments, to be also agreed upon, as shall redeem the said total cost and interest within the period prescribed, the said owners or authorities giving to the Company a full and sufficient mortgage, security or rent charge upon the lands improved or the works executed, for the time over which the payment of the instalments extends.

XIII. The Company shall have power to acquire, hold by mortgage or otherwise, to improve, sell and convey any land and real estate, and also to hold and sell any personal and moveable property whatsoever, which may be necessary for conducting the several operations of the Company, or as security for the payment of any moneys due to them or which shall comfort with the general design of the powers and provisions herein given and made.

XIV. In consideration of the character of the operations to be undertaken and the nature of the security upon which the repayment of their cost is based, it shall be lawful for the Company to issue Debentures in sums not less than twenty-five pounds currency each, either in currency or sterling as the Directors shall find convenient, bearing interest at the rate of six pounds per centum per annum, and payable either in this Province or elsewhere, and at such time respectively as shall correspond with the periods over which the repayment of their contracts shall extend, and so that the total amount of such Debentures issued or outstanding at any one time, shall not exceed two thirds of the entire amount of the cost of the works executed by and in progress of repayment to the Company.

XV. The Directors may and are hereby authorized to call at any time or times, as they may think needful, Special Meetings of the Shareholders, at the offices of the Company, or at any other place by adjournment, as may be found more convenient; and at each and all of the yearly General Meetings, the Directors shall submit a report of the state of the affairs of the Company, together with a true and correct balance-sheet and account, shewing the amount of capital paid up, the amount of moneys expended and liabilities, the contracts existing and other matters requisite to the full understanding of the affairs of the Company, and such meeting shall declare the amount of dividends to be paid to the Shareholders out of the profits of the Company, and shall transact any business which may be needful.

XVI. At such Meetings it shall be lawful for executors, tutors, curators, guardians, trustees and municipal authorities, to represent and vote on the shares in their hands, but they shall not be eligible for Directors or for any office under the Company.

XVII. Inasmuch as the works herein provided are calculated to be of essential sanitary benefit to the

inhabitants of cities, Towns and Villages, it shall be lawful for Municipalities to take and hold shares in the Capital Stock of the Company, to such extent as they may severally duly determine: Provided, that in no case the amount held shall exceed five shares to every one hundred souls of the population.

XVIII. The Company shall furnish the Bureau of Agriculture with a copy of each yearly report and statement of accounts, and shall at all times afford any further information as to the state of the affairs of the Company which may be required by the Legislature or the Government.

XIX. The interpretation Act shall apply to this Act, and this Act shall be deemed a Public Act.

MAKING CHEESE FROM A FEW COWS.

Except in the dairy districts, how seldom do we meet with good cheese on a farmer's table; how often do we meet with none at all. And yet every farmer keeps a few cows, sufficient at least to supply the family, with butter through the year, and there is no reason why every one who keeps two or three cows should not make good cheese enough for his own use. More labor indeed is required to make a pound of cheese from a small dairy than for a large one, but this is no excuse for not making it, since the same is true, to a certain extent at least, in regard to butter.

Some of our readers who make an hundred pound cheese every morning, will be inclined to smile at the following directions; but nevertheless, we can assure them that we have eaten the best of cheese made in this way. There are probably many better methods, and if our readers know of any we should be thankful to hear from them

The difference between making cheese from a small and from a large dairy consists principally in this In a large dairy the curd is made into a cheese every day, while in the small dairy the curd—obtained precisely as in the large dairy—is slightly pressed and laid by in a cool place till a sufficient quantity is obtained for making a cheese as large as desired.

The night's milk should be kept as cool as possible, and the next morning placed in a tub, together with the morning's milk; and the whole, by adding a portion of heated milk, raised to about 90 Fahr. The rennet is then added, the milk well stirred, and afterwards let alone till the curd is well come. The time this occupies varies from fifteen minutes to two hours, according to the amount of rennet, temperature, &c.—the warmer it is put together, and the more rennet there is added, the quicker will the cheese come. As a general rule the longer it is in coming, the tenderer and sweeter will be the curd. We should seldom desire it to come sooner than 40 minutes after the rennet is added.

When the curd is come, it is broken quite fine either by hand, or by a curd breaker, which cuts it into very small pieces. After this it is allowed to stand and settle. Some persons at this stage raise the temperature of the whey and curd up to 95 or 100. This is called "scalding." The practice has its advantages, and disadvantages. If the milk is warm enough when the rennet is added, it may be dispensed with; if too cool; it may be required. If it is desired to sell the cheese when a month or six weeks old, high scalding is indispensable, but in making good cheese for home use, we should scald very little if at all.

The curd is easily separated from the whey by throwing the whole into a sieve or on to a cheese cloth. The curd is then placed in a strong cloth, and well pressed to remove as much of the whey as possible. This is very important. It is then placed in a cool place, and the operation repeated daily,—or every other day if the milk will keep sweet, as it will in a cool cellar in the fall.

When sufficient curd is obtained in this way to make a cheese of the desired size, it is all mixed together, broken quite fine, and salted. It must the be pressed for a few hours; a clean dry cloth put around it, inverted and pressed again. At first it should not have too heavy a pressure put on it, but it cannot be pressed too dry. It should have dry cloths put round it and kept under the press till it does not wet them. Many will object to so much pressure, but we speak from experience and with much confidence on this point. Less scalding, and more pressure would, in our opinion, add greatly to the real value, and cheese-like flavor; though perhaps not to the buttery appearance and saleable qualities of most American cheese.

When the cheese is taken from the press it should have a little salt put on it, and be kept in the dairy, or other cool moist place for a few days. It may then be taken into a dry room, when for the first week or two it must be turned every day, or the side next the floor will mould. The room should be well ventilated and nearly dark.—*Country Gentleman.*

ABOUT GRINDSTONES.

The following is from a correspondent of the *Progressive Farmer.* As the period of harvest has approached, it furnishes a hint from which many farmers may profit:

I speak without fear of contradiction, when I say that more than one million dollars have been lost by the farmers in the United States, during the last half century, by their poor economy in the use of grindstones. Many a farmer, by using a poor grindstone loses enough in one season to buy a good one. But one farmer who is very much afraid of book farming, and never read an agricultural paper in his life steps foward and inquires how he has lost anything by grindstones? He says he uses the same one now that his father gave to him fifteen years ago—and then it was quite an old one—therefore he thinks he has been quite saving in that line of business. Perhaps it would be useless to try to convince him of his loss, for some men are wise in their own conceit, therefore there is but little hopes of improving them. Any farmer of common sense, who has ciphered through simple multiplication, can tell very near how much he loses every year by using a poor grindstone.

We will suppose that the work can be done one-third quicker on a good stone than on a poor one: we next suppose that the time spent by a farmer and his hired man in grinding tools during the year, amounts to twelve days: then, if one-third of this could be saved by using a good stone, here is a loss of four days. These four days work, together with board, cannot be less than four dollars, which would buy a stone of the first quality and all its fixtures. But the loss of time occasioned by grinding on poor stones is far from being all the losses that arises from the use of such stones. The tools cannot be ground near as well, therefore the workman cannot perform as much labor or do it as well, as if the tools had been properly ground. In my opinion many a farmer in this country loses from two to five dollars every year by using a poor grindstone.

THE GRAIN DRILL.

The Horse Drill has been much longer in use among good farmers than reaping and mowing machines, but it has not extended itself so rapidly as the latter. One reason for its slow progress in this country, is doubtless because it is not so pre eminently a *labor-saving* machine. The great object of the grain-grower in this country, is to save the trouble and expense of manual labor, and to *expedite* the several processes of cultivation, harvesting and preparing for market. The Drill is not remarkable as a *labor saving* implement. If we convert the horse-labor into its equivalent, and sow by hand, we shall probably find that little is saved either in time or expense. We must look elsewhere for the benefits of using the Drill. The evenness and regularity with which the seed can be sown; the uniformity of depth at which it is deposited, and the consequent greater immunity from the effects of frost in winter and spring, are some of the advantages of *drilling* grain. It is also alleged that wheat grows better, and is less liable to rust in drill's, than when broadcast. Repeated experiments have proved the superiority of drill-sowing in the old country, and also if we can believe the accounts we have seen, in the United States. In the few instances that have come under our notice in this country, equally beneficial results have been realized. It does not require many figures to show that if the Drill will give two or even one bushel more to the acre, other things being equal, than the broadcast method, it would *pay* to use it. They are now made in a much simpler form than the English Drill, and at much less cost. We believe they are manufactured at Hamilton, St. Catharines, Newcastle, and also imported from the United States. A very good kind called "Seymour's patent," is sold by McIntosh & Walton of this City. The above cut represents one of Messrs. Ruggles Nourse and Mason's Drills, of Boston U. S.

A Good Compost for Sandy Land.—Take 10 loads of stable or barnyard manure, 5 loads of clay, 20 bushels of ashes, and twenty bushels of lime; mix the whole well together, and let it remain in pile a few weeks; then turn it over, and it will be fit to apply to the land.

The above will make a better dressing for an acre of land than twenty-five loads of stable or barn-yard manure alone, and will last longer.—*American Farmer.*

In all composts intended for light, sandy soils, clay is one of the most valuable ingredients that can possibly be used. One reason why sandy lands are so little capable of vegetable production, in their want of adhesiveness. It is almost impossible to consolidate them sufficiently to secure that degree of retention so essentially and indispensably necessary to the decomposition of those organic matters which are applied in the course of cultivation as manure.

The quantity of clay required to change the constitutional texture of such lands, is necessarily great; yet with copious applications of putrescent substances, and the regular and systematic manipulations of judicious husbandry, the task of supplying as much as may be necessary effectually to ameliorate and permanently to improve the texture and productive capacity is by no means tedious.

There are few farmers who could not devote three or four days in the year, with their teams, to carting on clay from the low grounds, or to accumulating it in their yards and hog-styes, to be then worked up and composted with the voidings of the animals and other materials capable of imparting fertility to their lands.

The more clay one can afford on such improvements, the better; for there is little danger, in any case of applying too much. Sand on clay lands, is equally beneficial, and perhaps, in most cases, even more so.

PRIZE ESSAY ON CANADA.

We have received a copy of the Essay which obtained the first prize from the Paris Exhibition Committee, and find it as was to be expected, a very interesting and succinct history of this noble province, it natural resources, and the character and condition of its inhabitants. The author is Mr J. Sheridan Hogan, a young gentleman connnected with the political press, and for some time a resident of Hamilton, U.C. We notice some omissions and a few not very important errors, but as a whole the essay is a very creditable performance. We select a short chapter :—

AGRICULTURE AND ITS PROGRESS. THE SAME COMPARED WITH THE UNITED STATES.

Canada, but especially the Western Province, is and has been essentially an agricultural country. Acting upon a policy which it is neither necessary to explain, nor to discuss the merits of here, England has always desired to make Canada, and indeed all her North American colonies, marts for the consumption of her manufactures. The consequence is, that Canada's energy has been chiefly directed to agriculture. It is true that she has valuable minerals, but it is only recently that public attention has been directed to them, and that capital has been applied to their production. Whatever prosperity the Canadian people enjoy, it is emphatically to the soil, the use they have made of it, and the timber they found upon it, that they owe it. To follow the plough, therefore, is to follow what has led to Canada's wealth. To count her stacks of corn is to tell what she has to show for her labour. The statistics which mark her annual production are the mile stones on her road to prosperity ; and if the reader has a fancy for well-stored granaries, rich harvest fields, farm yards teeming with plenty, and beautiful animals—for they are not the less so for being domestic and useful,—I would invite him to take a short excursion upon this pleasant road of Canadian prosperity.

The value of all the vegetable productions of Canada in 1851 was estimated at £9,200 000,—grain being £5.630,000, other products £3 570,000. The wheat crop of that year in Upper Canada was 12.682,-550 bushels, or nearly 13¼ bushels for every inhabitant, while that of the United States in the same year gave only about 4½ bushels to each inhabitant.

It would exceed the limits of an Essay to trace the large increase in the vegetable production of Canada. The progress of the American States, unexampled perhaps in the history of the world, afford, by contrast, the best proofs of the agricultural advancement of Canada. Ohio, the best of these States for agricultural purposes, and where land is held, on an average, at double the price of that of the whole Union, produces, with nearly acre for acre under wheat cultivation, one-seventh less in quantity than Upper Canada, there being one and a half bushels less to each inhabitant.

In the last ten years the growth of wheat in the whole United States increased 48 per cent., and that of Canada, in the same period, increased 400 per cent. Even in Indian corn the production of Canada compares most favorably with the States, the increase in the States, for a period of ten years, up to 1851, being 56 per cent ; and for nine years, up to the same period, that of Canada was 163 per cent.

Of oats, the growth in Upper Canada has, in nine years, increased 133 per cent., and in Lower, seventy, against 17 per cent. during the same period in the United States.

The amount of live stock is justly considered one of the most important features in agriculture, and one of primary consideration in good farming, as without it the properties of the soil could not be sustained, the expense and difficulty of introducing Guano, Nitrate of Soda, and other costly manures pressing too heavily upon the farmer in a young country. In addition to this, stock is a source of wealth, as affording butter, cheese, wool, and other marketable produce.

In 1851, Canada possessed 592 622 milch cows, being two to every 6¼ persons, and 46,939 more than the State of Ohio, which had in this year about an equal number of inhabitants In sheep, Upper Canada had ten, and Lower Canada eight to every one hundred inhabitants, whilst the whole United States had 7 1-6th. In ten years the increase in the States of the latter animals was equal to 10 per cent., and in the weight of their fleece 32 per cent. In Canada, for the same period, the increase in animals was 35 per cent., and in wool 64, the quality of Canadian wool being declared, at the Great Exhibition, to be nearly equal to the finest samples of German.

Canada possesses one horse to every five inhabitants, and the increase in ten years has been 50 per cent. The best cattle increased 64 per cent. in six years and the total live stock, according to the Census, in 1851, was 4,249.314 head. The increase since that period must have been very large ; and the importation of the finest European breeds, carefully selected, has enabled the Canadian farmer to compete, in stock, with any part of the world.

From a summary of the facts elucidated by the last Census of Canada and the United States, taken within a year of each other, it appears that Canada far exceeds the most productive State of the Union in wheat, peas, rye, barley, oats, buckwheat, hay, hemp, flax, hops, maple sugar, and potatoes ; Ohio largely exceeding Canada in butter, cheese, grass seed, wool, tobacco, beef and pork ; and if the produce of the forest be added, of which Canada exported in 1851 to the value of upwards of a million, and a half of pounds, the relative wealth is greatly in favor of Canada.

Already the population of Canada is more than one-thirteenth of the United States, the area in square miles, exclusive of territories, being one-sixth ; her growth of wheat is one-sixth that of the American Union, and possessing, as she does, the great high way of the St. Lawrence to the West, her resources present an unrivalled field for energy and enterprise.

As a wheat exporting country Canada has made great progress ; and as the improved methods of agriculture are more generally adopted, and her rich territories in the west become better settled, her exports of breadstuffs will be immense. It would appear that the United States, on the contrary, during the last twenty years, have been unable, even with the temptation of famine prices, to increase their export, for in 1831 their export of wheat and flour was equal to 9,441 091 bushels, and the value $10,-461.715. In 1851 the export was 11,028.397 bushels, the value $11,543,063, the increase in twenty years being only 1,587,306 bushels.

In 1838 Canada exported 296,020 bushels of wheat, and, in 1852, 5.496,718 bushels, thus increasing eighteen times Her exports in grain have doubled four times in fifteen years, or more than once in every four years. They are now equal to one-half the entire exports of the United States.

There are, however, two articles which, until lately occupied little attention in Canada, namely, hops and flax Of the former a considerable amount has been already exported, and the quality was considered fully equal to the British at the Great Exhibition. The growth of flax is likely to become a very important feature in Canadian industrial wealth, for the soil and climate of Canada are regarded as better suited for its growth than the great flax producing countries. The fibre is of the best description, and Canadian hemp is fully equal to that from the Baltic. The Government have already shown a disposition to foster and encourage this new source of national wealth, and its manufacture will soon become very general in the country.

[The prediction respecting flax manufacture will not be verified in Upper Canada.—Ed]

WASH FROM SINK.

There is probably no article that can be applied to growing vegetables, more decidedly valuable, than the wash from the sink spout. And yet this is not generally understood by farmers, and few efforts are made even by the most economical, to economize an article in which are to be found all the elements which contribute to the sustenance of vegetables in a state of perfect solution, and consequently in a condition the most readily appropriable by the organs that they designed to nourish, invigorate and sustain.

It has been computed by chemical men that the amount of *pabulum*, or animal matter, contained in the urine of animals, is equal to that of the solid voidings. It has also been asserted that one hogshead of soap suds, if applied in irrigation, would produce effects upon the corn crop as obvious and enduring, as those resulting from a cord of the best manure. This assertion is, perhaps, erroneous; but that the effects of the article applied in the manner specified, would be highly salutary, no one who has witnessed the effects of soap-suds upon cucumbers, squashes, house plants, &c., can indulge a doubt. But the most economical method, probably of saving and appropriating this liquid to the purposes of vegetable enrichment, is to mix it with the materials of the compost heap. Any substance which will absorb it, may be made a vehicle for conveying it to the fields such as swamp muck, which, in a dry state, readily absorbs three times its weight of water, loam, old tan, rotten leaves, straw or saw dust, all of which are highly valuable, and act favorably both on the soil and crop.

If it found inconvenient to convey the sink waste to the piggery or barn cellar, dig a hole near the house six feet square, and two or three feet deep, according to the amount of water from the sink. If this is designed as a permanent arrangement it would be well to stone or brick it and cover the bottom and sides with water cement. But it will answer very well without either, by laying some old timber, joist or stones round the edge, and banking the earth up against it so that it may be covered up and not be offensive to the sight or smell.

On the bottom of this, lay meadow mud, straw, leaves, weeds, or common loam, and let the water on. These materials should be frequently supplied in small quantities until the place is full, when it may be carted away and the operation continued.

A Farmer who had adopted this plan, thinks he can make by it at least, twenty dollars' worth of the best of manure in a year, though the operations of the kitchen are limited, the family being small. —*N. E. Farmer.*

THE MONTHS.—AUGUST.

"Oh tis a goodly sight and fair,
To see the fields their produce bear,
Waved by the breezes lingering wing,
To think they seem to laugh and sing;
And call the heart to feel delight,
Rejoicing in that glorious sight,
And call the reapers skilful hand
To cull the riches of the land."

The name of this month was given by the Romans in honor of Augustus Cæsar upon his assuming the consulship, who had been successful in subduing Egypt and putting to an end the civil war. Prior to this it had been known as *Sestiles*, as being the sixth month from March, which was considered the first month of the Roman year. The Anglo-Saxons called it *Arnmonath*; Arn signifying harvest. It was also designated in accordance with its characteristic natural features; *Barn-Monath*, and *Harvest-Monath.*

Lammas Day, which falls on the first of August has been supposed to signify Lamb-Mass, because on that day the tenants who held lands belonging to the Cathedral Church of York, which is dedicated to St. Peter ad Vincular, were bound by their tenantcy to bring a live lamb into the church at high mass. Others give the same derivation, but explain it by saying that "lambs were not then fit to eat, they were grown too big." Others again have imagined that it came from the Anglo Saxon Hlafmaessa, that is Leaf-Mass, "because on that day the English made an offering of bread made of new wheat." It is a pleasing feature in the character of our ancestors that they were accustomed to express their gratitude for the gifts of Providence by special acts of thanksgiving in public worship: an example founded in the true spirit of philosophy, and most obviously in accordance with the Divine will.

The grand feature of this month is the Grain Harvest, which is usually commenced in this country in July, but can seldom be said to be completed before the middle, or in late districts, the end of August. The farmer is now about realizing the fruits of his skill and toil. Howitt thus truthfully describes this joyous sea on: "It is a time for universal gladness of heart. Nature has completed her most important operations. She has ripened her first fruits, and a thousand hands are ready to reap them with joy. It is a gladdening sight to stand upon some eminence and behold the yellow lines of harvest amid the dark relief of hedges and trees, to see the shocks standing thickly in a land of peace; the partly reaped fields, and the clear cloudless sky shedding over all its lustre. There is a solemn splendour, a mellowness and maturity of beauty thrown over the landscape. The wheat crops shine on the hills and slopes, as Woodsworth expresses it like golden shields cast down from the sun." For the lovers of solitary

rambles, for all who desire to feel the pleasures of a thankful heart, and to participate in the happiness of the simple and the lowly, now is the time to stroll abroad. They will find beauty and enjoyment spread abundantly before them. They will find the mowers sweeping down the crops of pale barley, every spiked ear of which, so lately looked up bravely at the sun, is now bent downwards in a modest and graceful curve, as if abashed at his ardent and incessant gaze. They will find them cutting down the nestling oats, each followed by an attendant rustic who gathers the swath into sheaves from the tender green of the young clover, which commonly sown with oats to constitute the future crop, is now showing itself luxuriantly. But it is in the wheat field that all the jollity and gladness, and picturesqueness of harvest is concentrated. Wheat is more particularly the food of man. Barley affords him a wholesome but much abused potation; the oat is welcome to the homely board of the hardy mountaineers, but wheat is especially, and everywhere the "*staff of life.*" To reap and gather it in, every creature of the hamlet is assembled. The farmer is in the field, like a rural king amid his people—the laborer, old or young, is there to collect what he has sown with toil, and watched in its growth with pride; the dame has left her wheel and her shady cottage, and, with sleeve-defended arms, scorns to do less than the best of them; the blooming damsel is there adding her sunny beauty to that of universal nature, the boy cuts down the stalk which overtops his head; children glean among the shocks; and even the unwalkable infant, sits propt with sheaves, and plays with the stubble, and

With all its twined flowers,

Such groups are often seen in the wheat field as deserve the immortality of the pencil. There is something too about wheat-harvest which carries back the mind, and feasts it with the pleasures of antiquity. The sickle is almost the only implement which has descended from the olden time in its pristine simplicity—to the present hour neither altering its form nor becoming obsolete amid all the fashions and improvements of the world. It is the same now as it was in those scenes of much beauty which the scripture history without any labored description, often by a single stroke, presents so livingly to the imagination, as it was when tender thoughts passed

Through the sad heart of Ruth, when sick for home,
She stood in tears amid the alien corn;

When the minstrel king wandered through the solitudes of Paran, or fields reposing at the feet of Carmel; or as it fell on a day, that the child of the good Shunamite went out to his father to the reapers. "And he said unto his father, My head! my head! And he said to a lad, carry him to his mother. And when he had taken him, and brought him to his mother, he sat on her knees till noon, and then died." 2 Kings iv. 18–20,

Let no one say it is not a season of happiness to the toiling peasantry: I know that it is. In the days of my boyhood I have partaken of their harvest labors, and listened to the overflowings of their hearts as they sat amid the sheaves beneath the fine blue sky, or among the rich herbage of some green headland beneath the shade of trees, while the cool keg plentifully replenished the horn, and sweet after exertion were the contents of the harvest-field basket. I know that the poor harvesters are amongst the most thankful contemplaters of the bounty of Providence, though so little of it falls to their share. To them harvest comes as an annual festivity. To their healthful frames, the heat of the open fields, which would oppress the languid and relaxed, is but an exhilarating and pleasant glow. The inspiration of the clear sky above, and of scenes of plenty around them of the very circumstance of their being drawn from several dwellings at this bright season, open their hearts and give a lip to their memories and many an anecdote and history from "the simple annals of the poor" are there related, which need only to pass through the mind of a Woodsworth or a Crabbe, to become immortal in their mirth or woe"

The description of harvest work given as above by Mr. Howitt requires considerable modification in reference to the conducting of such matters on this continent. The "cradle" has for a long time almost wholly displaced the sickle, and such of late years has been the progress of agricultural mechanics that the reaping machine is rapidly superseding the former in many districts. In this country it is of the utmost importance to gather the harvest quickly and cheaply; an object which improved machinery only can facilitate. Even in Britain within the last three or four years the Reaping Machine has been not only introduced, but successfully and extensively employed in several counties; and it is every year making progress. It is a curious fact that we owe the invention of this valuable implement to a Scotch clergyman, now living; and it is generally conceded by the farmer at home that Bell's Improved Reaper is upon the whole the best Machine yet introduced, although most or all of the more celebrated American machines have had their comparative merits tested by repeated trials. It must certainly be confessed that these modern changes which must be after all regarded as great improvements, have to some extent interfered with our early and poetical associations in connection with the season and work of Harvest. Like the modern Railway, mowing, reaping and thrashing machines are great innovaters on old and often pleasing associations and customs, which are destined to yield to the progress of improvement.

With regard to the warmer portion of the year it has been observed that in the three months previous to harvest, there has been more of actual beauty to please the eye, as there has been also greater melody to charm the ear. The loveliness of Spring, "when wheat is green and hawthorn birds appear," when all is fresh, dewy, and bright, and the hand of man has not yet swept away with scythe or sickle, the fair produce of the meadows and fields,—that loveliness is not to be equalled, far less surpassed by any of the glories of autumn. Sweetly does Bishop Heber describe a journey taken at this most beautiful of seasons.

"The thrush from the holly, the lark from the cloud,
Their chorus of rapture sung jovial and loud;
From the soft vernal sky to the soft grassy ground,
There was beauty above us, beneath and around.

"The mild southern breeze brought a shower from the hill,
And yet though it left me all dripping and chill,
I felt a new pleasure as onward I sped,
To gaze where the rainbow gleamed broad overhead.

"Oh! such be life's journey, and such be our skill,
To lose in its blessings the sense of its ill;
Through sunshine and shower, may our progress be even,
And our tears add a charm to our progress to Heaven!"

The twelfth of August, when grouse and ptarmigan shooting begins, forms quite an epoch in the life of a sportsman in the old country. And this is the twelfth of August," says Christopher North, "and all the Highland mountains have since dawn been astir, and thundering to the impetuous sportsman's joys! Our spirit burns within! Lo! how beautiful those fast travelling pointers do their work on that black mountain's breast, intersecting it into parallelograms, and squares, and circles, and now all asleep on a sudden, as if frozen to death! Higher up among the rocks and cliffs and stones, we see a stripling whose ambition is to strike the sky with his forehead, and wet his hair in the misty cloud, pursuing the ptarmigan, now in their viariegated summer dress, seen even among the unmelted snows. The scene shifts, and high up in the heath above the Linn of Dee, in the forest of Braemar, the Thane—God bless him—has stalked the red deer to his lair, and now lays his unerring rifle at the rest on the stump of the witches' oak. Never shall Eld deaden our sympathies with the pastimes of our fellow men, any more than with their highest raptures, their profoundest griefs. Blessings on the head of every true sportsman of flood, or field or fell!"

We are tempted to give another extract from the pen of the same inimitable writer in reference to this joyous season. "At this season of nature's abundant, we might almost persuade ourselves that human want was a fiction; see yonder line of lusty mowers sweeping down the abundant crop of pale barley, how vigorous, how cheerful their appearance These are not the sons of misery and starvation, they have made acquaintance with barley long before this, and in a form quite as congenial to them, whether in the brown loaf or the foaming tankard; and now turn to the wheat-field, which is still more an attractive scene. * * * * All is beautiful, all is tender and touching; and as we walk in the corn-field, even now, these glorious old scenes live again, and still continue to do, so long as corn grows. An average crop is satisfactory, but a crop that soars high above an average—a golden year of golden ears, sends joy into the heart of heaven. Let the people eat—let them have food for their bodies, and then they will have a heart to care for their souls."

We have abundant reason to feel thankful to a bountiful Providence for the liberal manner in which the husbandman's labors have been crowned with success in this highly favored portion of the British Empire. Most of the crops will be good, several of them abundant, far more so then there was any reason to expect a month or two ago. With a fortnight's fine weather most of the crops will be safely gathered in. How appropriate the lines of the Poet of the Seasons:—

"The HARVEST treasures all
Now gathered in beyond the rage of storms,
Sure to the swain; the circling fence shut up;
And instant winter's utmost rage defied,
While loose to festive joy, the country round
Laughs with the loud sincerity of mirth,
Shook to the wind their cares"

Reverting for a moment to the festivities which accompanied the *Harvest Home* in the olden time, we may appropriately conclude our somewhat desultory remarks in the words of Tusser, with the simple observation that however times and customs may change in the course of the different generations of mankind, the spirit of kindness,—of wide-embracing human sympathies, remain for ever the same.

"Once ended thy harvest, let none be beguiled,
Please such as did help thee, man, woman and child,
Thus doing, with alway such help as they can,
Thou winnest the praise of the labouring man."

B.

NOE WHEAT FOR DISTRIBUTION.—At the Agricultural Bureau of the Patent Office there have been received parcels of the early Noe wheat, in beautiful varieties This fine grain was introduced into France by M. De Noe. It has been adopted and spread extensively through the centre of the country under the name of "blue wheat," is hardy, productive, and in quality surpasses the well-known Sauman wheat, which it is fast replacing. Preference is also given to it on account of its precocity, and accords better with rye. As an early spring wheat reaching maturity before the fly or rust can effect its progress, it challenges attention especially in the middle of the Southern States. No time will be lost on transmitting samples of this grain to proper hands in the respective States and Territories for experiments and reports.

Horticulture.

OSAGE ORANGE HEDGES.

We copy the following from the June number of the Wisconsin Iowa *Farmer*. The Osage Orange has been most thoroughly tried in the West :—

We are well aware that considerable prejudice exists against this species of live fence, as not being adapted to our climate and soil; and that this prejudice is entertained by many who are supposed to have experience enough in such matters to give their opinions good authority We have never felt certain of the value of this hedge-plant until of late, and have therefore recommended a trail of it more as a proper experiment, than as a certain and valuable investment. Now, however, we have become well satisfied that this plant is well suited to the climate and soil of Wisconsin, Iowa, and we will give our reasons why.

A few weeks since we happened to call at the house of Mr. Wm Truesdell, in the city of Janesville, and were shown a young Osage Orange hedge, three years from the seed, and having stood two years in its present position. It had stood uninjured the two last very hard winters—not one plant in fifty having died either winter, except where some plants were exposed on the edge of a high wall, with little soil to guard them. The plants were alive to the very bud below where they had been pruned, which was about twelve to fifteen inches above the ground If these plants, then, can thus stand two such winters, and grow thrifty and rapidly, they can stand every effect of our climate. We are well aware that others have not been so fortunate as Mr. Truesdell, but they have not used the pruning shears as liberally as he has. They have attempted to raise walking-sticks, while he has tried to raise a hedge. They may have been unsuccessful in their attempts; he has been successful in his. You can succeed as well as he did, if you will do thus :—

There is yet time to transplant and sow the seed this season—though rather late for the former. We are told the last of May is the best time for transplanting—perhaps the lateness of this spring will allow it to be done early in June, hence we will give some directions how to commence :

Prepare the line of your hedge by deep ploughing (trenching with a spade is of course still better), three feet, or even four feet wide Set your plants either in one row or two, according to your fancy. If in one, 8 inches apart—if in two, a foot apart, breaking joints, thus—

* * * * * * * * *

The two parallel rows being about 4 or 6 in. apart. Cut down your plants early in the season (in August) to three buds. Again, in the fall, cut them down, not to any particular height, but so that the lateral branches of one plant may interlace with those of another, and form an impenetrable mass, so that you cannot thrust your open hand through. As the base close to the ground, becomes dense, allow the plant to rise, still keeping lateral bracing running out and interlacing. After they have been set two years they will run up the height of an ordinary fence in six or eight weeks after pruning. We think in one year more, a very insufficient fence will, with the aid of the hedge, be sufficient protection; and, in two years more, you may take away all fence, and leave the hedge as a protection, that will last half a century.

In pruning down as closely as we have recommended, you lose nothing, for the upright stems will instantly grow up to a sufficient height for protection, and the tops will not be winter killed. Remember, however, that the line of your hedge is to be kept perfectly clean and free from weeds. This will require very little labor after the first year, as the plants overshadow the ground too much to allow any great growth of weeds.

The Cost.—A gentleman in Janesville, desirous of forming such a hedge, told Mr. Truesdell that an offer had been made him to set out and raise for four years, at seventy five cents per rod. Mr. T. insisted, that by buying the plants at four dollars per thousand, and paying cash for all the labor, it could be done at twenty five cents the rod. This may appear low, but by raising the plants from seed, it could certainly be done for that sum, if not for less.

If you get the seed, get that that has been raised as far north as it can be well ripened.—The colder the climate the seed is raised in, the better it will fit a cold climate; but with close pruning seed will do well, even if brought from Texas. Plant immediately.

REMARKS ON BUDDING AND GRAFTING.

Buds should always be set before the stock or bud has ceased to grow for the season. In setting pears in pear stocks, it is important to commence earlier than apples, as the former do not grow so long as the latter. Plum and cherry stocks also stop growing early, unless the development is kept up by stimulating manure, and careful tillage Apple trees, if healthy and in a good growing condition, may be budded late in August. Peach trees continue to grow even longer than apple trees, and it is never advisable to bud them early. In all trees, when budded, there should be sufficient sap to cause the bark to peel freely. Of the proper time for performing this operation in the several kinds of trees above mentioned, the ready peeing of the bark is the only criterion to be relied on. In grafting, it is frequently necessary for those who are engaged extensively in the business, to preserve scions for some months before the time arrives for inserting them. For this purpose, no material has yet been discovered superior to damp sawdust. In regard to its efficiency the editor of the *Albany Cultivator* says :

"The mode first suggested to us by T. G Yeomans, of Walworth, N. Y., of preserving the scions of fruit trees in moist sawdust, has proved superior to any other. It is better than damp moss, in the facility with which the scion may be perfectly imbedded in it, leaving no interstices; and it excels moist sand, it being lighter, more spungy, and entirely free from a grit which may injure a knife. We have without difficulty preserved scions, which were cut in the summer for budding, till the following spring, and inserted them as grafts with entire success; and we have kept winter cut grafts till midsummer perfectly fresh, and employed them successfully in budding. A bushel of sawdust will retain its moisture for many weeks nearly unaltered, but water must not be applied too copiously or water soaking and decay will be the result. The north side of a building or a cool cellar is the best place."

In *Kenwick's Work* on *Orchadiny*, we have the following remarks on Innoculating ;

"Innoculating is the operation of transferring any desirable variety of tree upon the stock of an inferior or wild variety. The operation is principally

practised on small trees, and only during the time the sap flows freely, and chiefly during the months of August and September. Select for the buds the ripest young twigs of the present year, and cut off the leaves, leaving the footstalk entire. Having selected a smooth place in the stock, make a perpendicular slit downward, quite through the bark, an inch or a little more in length. Make a cross cut at the top of this slit quite through to the wood, a little slanting downward; next with the ivory haft of the budding knife, raise the bark on both sides from top to bottom, being very careful not to injure in the least the cambium or sap wood Next and with expedition proceed to take off a bud; this is effected by entering the knife a little more than half an inch below the bud or eye, quite through the bark, and separating the bark from the wood to the same distance above the eye, always leaving a very thin slip of wood of about one-third of the length of the bud, this thin slip of wood occupies the middle section of its length. The bud is to be inserted in the stock to the bottom of the slit, and between the bark and wood; and the top of the bud being squared even with the cross cut, every part except the eye, is firmly bound and covered with strong wet bass string or matting."

Deformed Roots.—English farmers are much troubled with deformed roots, in their culture of carrots, parsnips, and other root crops. They form what are called fingers and toes, instead of the conical and regular shapes usual in successful root-growing. On a large scale this becomes a serious evil. A great amount of discussion has been had in their papers as to the cause of this difficulty, aad the remedy for it. A late writer in the *Agricultural Gazette* states that the difficulty is in the seed-growing, and not in the root culture. His remedy is to cut out the central umbel, in seed-growing, and thus distribute the sap in to the lateral ones, when a healthy seed is produced. In this way, "fingers and toes" never disturb him. In using the seed of the central and large umbels, he always gets the deformed roots.—*Prairie Farmer.*

Communications.

(To the Editor of the Canadian Agriculturist.)

Sir,—In the year 1849 I visited the farm of the late John Delafield Esqr. situated on the North-Eastern border of Seneca Lake, one of the most beautiful and the largest of the Lakes of Western New York. For order and systematic arrangement in the house and in the field, this stood first among the farms of the State.

A set of rules was uniformly shown to laborers before they were indentured, and to which they were required to subscribe. They were somewhat similar to those given by Loudon, and were conspicuously hung up in the cow-house, the stable, and the barn, A tool room, simple as it may seem, is too seldom seen among farm buildings; here it was a reality and contained a place for every tool and every tool in its place. Each laborer had his own spade and shovel, pitch-fork and scythe, of which he was expected to be proud, because if they were not "his brave associates" they were at least "the partners of his toil."

A plan of the farm was kept by its proprietor having its field divisions subsidiary to an accurate registration of rotation of crops, whether of four, five, or seven years. The treatment a field had undergone could thus be seen at a glance, its prospective treatment kept before the view, and the success or its opposite, of its experimental patch easily noted; for the latter was an important object at the Oaklands and afforded much scope for intellectual enjoyment by the investigation of the results of the application of composts and artificial manures.

Numerous specimens of spear and arrow heads used by the Indian tribes have been turned up by the plough in the locality under notice. But the geological features of the neighbourhood are much more interesting. In the list given below there are a few minerals, some unstratified rocks, and several fossils. These were all collected on the farm, and are now deposited in the museum of the New York State Agricultural Society.

"In crossing a heath," says Paley "suppose I pitched my foot against a stone, and never asked how the stone came to be there; I might possibly answer that for anything I know to the contrary, it had lain there forever: nor would it perhaps be very easy to show the absurdity of this answer." This reasoning the science of geology readily confutes. Many of the specimens enumerated below contain the petrified remains of fossil animals, and these must have lived anterior to the formation of the rocks in which they are found.

Different rock formations present themselves in the County of Seneca. In its northern part we find the Onondaga salt group of New York geologists, deeply covered with alluvium, and corniferous limestone, distinguished from that of Onondaga by the absence of crinoidal columns. The soil covering these rocks is clayey, but in the neighbourhood of the Oaklands is of a more or less loamy character, as it is more or less mixed with the northern drift. It may also be denominated calcareous, from containing lime liberated by the constant disintegration of fragments of the rock.

The Marcellous shale and the Hamilton group occupy a large portion of the County. These contain many fossils and produce a calcareous soil. Next come the Tully limestone, Genesee slate and shales of the Portage group.

The groups of rocks here enumerated belong to the New York system, which is analogous to the Silurian system of Murchison, equivalent to the Transition series of Werner, and anterior to the old red sandstone and carboniferous periods.

The following list is in the order in which the

specimens are arranged in their case. It may appear dry to some of our young farmers, but it was collected during the ordinary vocations of a farm laborer's life, and proved a valuable source of recreation after his daily toil.

Those named more than once are of different varieties.

1st *Shelf*.—Limestone, feldspar, silex, greenstone, orthis in slate, quartz, tentaculites, roestone, or this centrilineata [Hudson river group].

2nd *Shelf*.—Granite, ambronychia, trilobite, slate with encrinite, [Hudson river group] orthis, calymene senaria, tail of trilobite.

3rd *Shelf*.—Silex, granite, quartz, garnet in quartz, hornstone and orthis, horneblende, hydraulic lime with sulphate of magnesia, micaceous quartz, cyathophyllum basaltiforme, encrinite.

4th *Shelf*.—Conglomerate, feldspar, augite, pearl spar in limestone, pleuro'omaria, cyathophyllum and atrypa, encrinal columns and rings.

The last are called Entrochi, or wheel stones, and in the Northern part of England retain the name of St. Cuthbert's beads.

"On a rock by Lindisfarn
Saint Cuthbert sits and toils to frame
The sea-born beads that bear his name."
MARMION.

5th *Shelf*.—Siliceous limestone with encrnites, sandstone (Clinton group) with atraypa hemispherica, cyathophyllum strombodes, favosites polymorpha, cyathophyllum.

6th *Shelf*.—Encrinital limestone, hornstone, granite. limestone with orthis, micaceous quartz, orthoceræs, water lime with calc spar and fluor spar, niagara limestone with corallines, loxomena in Onondaga limestone.

7th *Shelf*.—Granite, Hudson river sandstone with orthoceras, Onondaga limestone with crinoidal joints gneiss with garnet, limestone with shells, limestone with cyathophyllum, leptæne in sandstone.

Descriptions and illustrations of the above fossils will be found in the Palæontology of New York by Professor Hall, to which work I would refer the reader for information.

A. K.

Quebec 27th July 1855.

VIGOROUS APPLE TREES.

(*To the Editor of the Agriculturist.*)

SEYMOUR, June, 21st 1855.

SIR.—Having observed in a late Number of the *Agriculturist* that some one in the United States, had received a premium for the size of his apple trees,—some of which measure 16 inches in circumference, although planted so lately, as 1849, I beg to inform you, that, to-day I assisted to measure several trees in an orchard belonging to Mr William Humphries, of the Township of Percy, in the County of Northumberland, which were planted in the *Spring of* 1850. We found one to measure full 17—several 16 inches A blue plum measured 16 inches. These trees were purchased from an apple-tree pedlar who stated they were grown at Toronto. They were, when planted, the usual size of Pedlar's trees, except that Mr. H. *picked the smallest*, considering them the most likely to *thrive*. Their height averages between 14 and 15 feet—the plum is over 15 feet. The branches commence between 5 and 6 feet from the ground Of course theirappearance is unusually healthy. Mr. H. has simply kept the earth well worked in green crop; and washes the trees occasionally with weak lie. The soil is a rich loam. I am troubling you with this to show how our much abused climate affects fruit trees, if the trees meet with the commonest care —They produced fruit last year; and this year are well loaded. Indeed if I did not know to the contrary, I should consider them of ten years' growth at least.

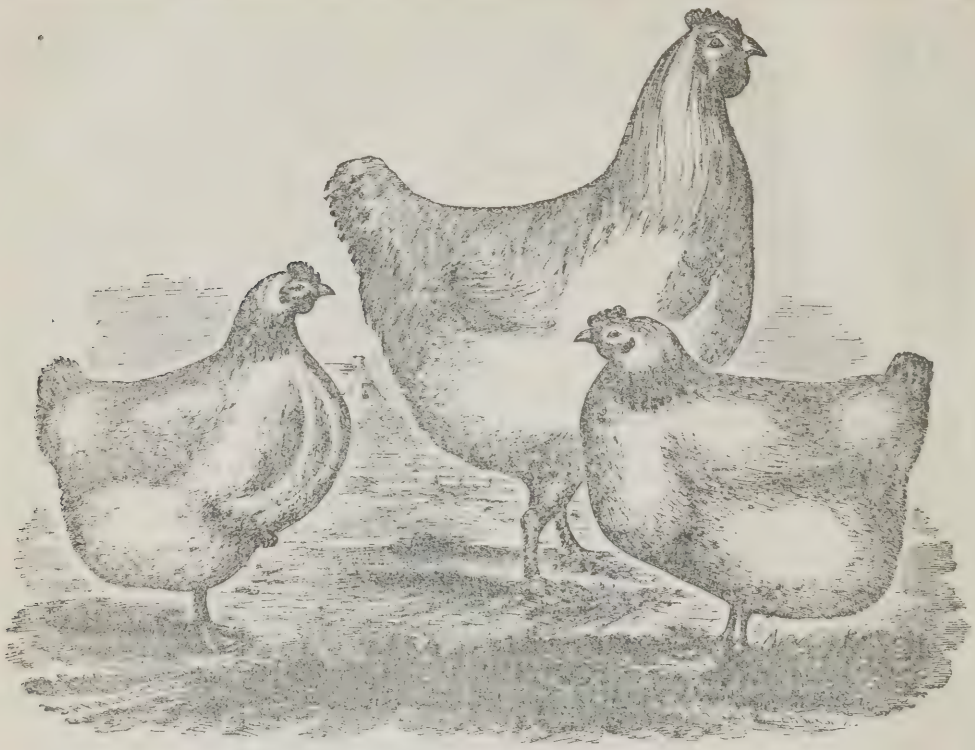
I am, Sir, Yours very truly
H. ROWED,
Pres't of the Seymour Ag. Society.

The trees referred to, were probably grown at the "Toronto Nursery," so successfully managed by its enterprizing proprietor, Mr. Geo. Leslie.

We set out last spring upwards of fifty trees of Mr: Leslie's choicest varieties of apples, cherries, plums, pears, &c., and only one,—a Bolmar Washington, has failed. They were all well-formed, vigorous trees; and have put forth an abundant foliage Some of the cherry trees are bearing fruit, the present season.

We have no doubt that hardy fruit-trees will flourish as well, and bear as abundantly on Canadian soil as any where else on this continent. We have seen as fine peaches from trees growing in the neighborhood of Toronto, as we have seen in New York. Tropical plants will not of course, thrive in this latitude, but with *care* and *good cultivation*, we can grow as good fruit as any State in the Union.

While speaking of the Toronto Nursery, we may remark, that persons planting out a young orchard should be careful to purchase their trees of responsible parties. Yankee pedlars have made frequent inroads into this province with "cheap" and *worthless* trees,—the extent of the imposition being unknown until years afterwards. We believe Mr. Leslie does not "peddle" his trees; but pedlars have purchased occasionally from him to fill out their orders. We would advise, in all cases, to purchase from a good Nursery, direct.



BRAHMAH FOWLS.

MOUNT PLEASANT FARM.
CLOCKVILLE, MADISON CO., N. Y.
June 14, 1855.

MY DEAR SIR:—I have your kind favour of the 9th inst., and with much pleasure send you a description of my Prize Brahmas, to accompany their portraits; and perhaps it may not be inappropriate to remark in this connection, that, last season, I kept fourteen distinct breeds of fowls, as I wished to form my own opinion as to the merits of the different varieties. Out of these fourteen varieties, I have selected the Brahmas and Black Spanish for future use. Mr. David Ely, of Rochester, N. Y., has very kindly sent me some eggs from his Pheasant coloured Chittegongs. These are large and beautiful birds, but I have not yet tested their excellence. Mr. Ely thinks they can hardly be excelled.

The colour of my Prize Brahmas is white, with beautifully pencilled necks, running in very regular black streaks, or marks, from their heads nearly to their shoulders; their tails, which are very short, are nearly black; they have two or three black feathers in the tip of the wing, but these do not shew when the wing is in its natural position. They are short-legged, compact, heavy fowls, with very full, plump breasts, and are very fine boned. The rooster is not so distinctly pencilled as the hens are, and his long feathers have more of a creamy shade.

The two hens weighed in November last, (being spring chicks,) 8lbs each; the rooster, a year older, 12lbs. They are very docile, are easily confined with a picket fence three feet high, and, in fact, are just the kind of fowls to become the pet of the farm yard. They are excellent layers, but I have not yet tested their table qualities, though the half-bred fowls are excellent in this respect.

The portraits sent you are very accurate, being drawn from life by J. R. Page, Esq., of Lennett, N. Y., who is unquestionably the best animal delineator in this country. They were engraved by Leadly, Miller & Mix, of Rochester, N. Y. They are very superior fowls of the breed, as may be inferred from the fact that they easily won the first prize at the last Show of the New York State Poultry Society, being in competition with the fowls of most of the oldest and best breeders in the State.

If I am successful with my chicks this season, I

will send you a pair from the prize fowls. You can then see their beauty and test their excellencies and form your own opinion of their merits.

Very respectfully Yours,

S. P. CHAPMAN.

GEO. BUCKLAND, ESQ.

[We are obliged to Mr Chapman for his kind offer, and shall be happy to test for ourselves; although we feel no inclination to impugn, in the slightest degree, either his authority or judgment. We wish Mr. Chapman as equal a measure of success with poultry, as he has achieved in Durhams.]

—*B*

THE CROPS.—WHEAT FLY, &c.

(To the Editor of the Canadian Agriculturist)

DEAR SIR,—Having been absent a few weeks on a tour through some of the neighbouring States I find, on my return, the July No. of the *Agriculturist* in which is expressed a hope that some of your readers, in the neigbourhoods that had suffered from the fly, would give you some specific statements in reference to the extent, &c., for your next number. In sending you these statements it is not so much my object to give you information as to the extent of the damage done by the fly, which I am aware must be quite considerable, though perhaps it would be hard to determine the amount, as, I am inclined to think, the late rains have been favourable to the injured fields of wheat, as it is to make some remarks on the different varieties of wheat that are now being sown.

When the spring opened, the prospect was that our wheat crop this year, would exceed that of any former, but as the season advanced it was in many fields especially those on high or rolling land, observed that the wheat, instead of improving, was wasting away; this, at first, was attributed by some farmers, to the effects of the drought that then prevailed, but it was soon ascertained that the insect' as we sometimes call them, were thick in the joints, and many fields, that looked well in the spring, were perishing; but these ravages of the fly, were, almost entirely, confined to the red chaff, white wheat, of which unfortunately, there was more sown than of any other variety, as it had long been looked upon as the best, or most productive kind; but many Farmers, in consequence of its being so liable of late years to mildew, or rust, had sown earlier varieties, such as the wild goose, or Mediteranean, white flint, blue stem, and particularly the Soule of which, I believe, not any have suffered materially from the fly.

The blue stem grows large and hard straw, and is particularly adapted to the poorer soils; but the Soule grows the least, and, I believe, the hardest straw, and is, perhaps, a little the earliest variety, and, consequently, the best adapted to rich soils, and in this vicinity is sown to considerable extent.

What damage the weavel, or worm in the grain will do this year has not as yet been ascertained, but for several years past it has been on the increase; last year I had nearly two barrels of worms that went through the screen into the box, [the crop was thrashed immediately after harvest] In many parts of the United States they have ceased growing wheat in consequence, as I was told, of the ravages of the weavel, but I saw, while on my late tour, that in New Jersey and Pennsylvania they have again commenced to grow wheat, to a considerable extent, but all of the Mediteranean variety, [large chaff and bearded,] which, I was told was not subject to being troubled by the weavel.

I remain yours very sincerely,

P. FISHER.

Port Nelson, 19th July, 1855.

(To the Editor of the Agriculturist)

DEAR SIR.—Having been travelling the last few weeks through different sections of the country, and my business leading me to observe the growing crops, perhaps a short account of my travels and the prospect of the harvest, may be interesting to some of your readers; and if you think it worthy of a place in your interesting paper, you are at liberty to publish it.

As the wheat crop is the most important, I shall direct my attention chiefly to that Through this section, and eastward along the front, the winter wheat was more or less injured by the severe winter, but the fine growing summer has, in a measure made up the deficiency, and there will be a very fair crop, especially as the spring wheat is unusually heavy. Near Toronto, and northward all the way to Lake Simcoe, the wheat crop, spring and winter, looks remarkably well. I saw many fields that were far above the fences, and my curiosity led me in several instances to examine and measure the height, which I found to be over six feet. It was also very thick and stout, and, in a few instances, badly down. Taking into account the breadth sown throughout the country, there must be an abundant harvest, far above the average.

Yet wheat is not the only good crop, for all kinds of grain look well, and bid fair to yield abundantly, except Indian corn, which is backward. Meadows, generally speaking were good.

Perhaps you will allow me to say a word about my business. It was the introduction of the Combined Mowing and Reaping Machines, which we are manufacturing and spreading over the Province as widely as possible, that the public may judge for themselves—the only true way of judging. I am happy to say that in every instance where I have

started them, they have given perfect satisfaction. In many cases the trials were made in heavy lodged clover; and in one case, on Mr. Caspard's farm, Yonge Street, I started one upon a low piece of interval land, where the crop was as heavy as I ever saw it, and all laid down; but still I went through without any stoppage, did the work well, far beyond my own expectations, and to the surprise of all present, who acknowledged they never expected to see such a machine capable of cutting crops in that state.

Yours truly,

DANIEL MASSEY.

Newcastle July 20, 1855.

Miscellaneous.

PRESERVATION OF FRUIT.

The art of preserving fruits, especially the more perishable kind, such as Raspberries, currants, cherries, &c. is not generally understood or practised as it ought to be. For the last two or three years the plan of preserving the more delicate fruits of the garden by placing them in cans or tight vessels, expelling the air and sealing them up hermetically, has been extensively practised in the States, and by several persons in this country, with the fullest success. It is found to be far better than the old plan of *drying* these fruits. By the old plan we preserve only a portion of the fruit. Dry them ever so carefully, and there escapes with the water some portion of the original aroma and flavour of the fruit. Currants and goosberries have frequently been preserved by being put into bottles while green, and the bottles afterwards sealed up. Currants have been kept in this way twenty years. But it is possible to take the perfectly ripened fruit and preserve it for months and years.

In the first place prepare a suitable number of cans made, of the best tin, to hold the quantity you wish to preserve. It is best to have these cans small, holding only what will be eaten soon after one has been opened; for it is observable that anything that has been kept preserved from decay by an arrest of natural laws, for a long time, when restored to the influence of those laws, undergoes chemical changes with great rapidity Let those cans be, say seven or eight inches long and four or five inches in diameter, a hole being left in the cap of one end, an inch perhaps in diameter. The fruit selected should be perfectly ripe and sound, having no spots of decay upon it. The softer fruits, such as strawberries, raspberries &c., had better be crushed, as the air may then be more entirely expelled. Currants, goosberries, cherries, plums, and peaches, may be put in whole. When the cans are filled a piece of tin is to be soldered over the hole in the end, having in it a small hole of the size to admit a pin. The canisters are then to be placed in boiling water, and so kept until the air has ceased to issue from the pin hole. This can be easily known by dropping a drop of water on the hole; if it bubble, then the air is still issuing from the canister; if it does not bubble then the process is complete, and a drop of solder on this hole hermetically seals it. If these canisters be now kept in a cool place the fruit will have all the freshness at the end of a year's time that it had when put up.

Almost every family in the summer and fall make what they call their preserves. To do this an amount of sugar is used, equal in weight to the fruit to be preserved. A day's boiling, skimming and packing, and the thing is done for the time But at sundry times afterwards, unless the luck is unusual, the preserves are "working," and the boiling and skimming has to be gone over again.

Now at an expense a trifle only greater than that of making the "preserves., of one year, a stock of canisters is obtained that will last many years, and in which fruit, with no more trouble, can be preserved with all its unchanged original flavour upon it; and this too, when the work is well done, requiring no subsequent operation.

The following recipe is highly spoken of by those who have tried it. The principle is much the same as that already recommended:

A lady sends us the following recipe for preserving fruit through the year,—or a dozen years—with the flavour as rich as if plucked from the stem today. In mid April in southern Ohio, she feasted on fresh peaches, cherries, plums, pears, &c., preserved in this manner, rendering the luscious peach and fragrant berry, eaten simply with cream and sugar, far preferable to the usual indigestible preparation of fruit cooked so hard in sugar that it is impossible, from the taste to name it. The fixed air removed, and external air excluded, the most perishable substance will remain unchanged indefinitely. With an air-pump fruit may be preserved whole; but here is a process every one can follow:—Prepare your fruit for eating; remove the stone and pare it, if necessary, then, in a close vessel, with water to keep it from burning, over the fire—or, which is better without water in an oven—give it a scalding heat, which does not cook it, or injure the flavor; then, filling a jar or jug, stop it close or seal it. Keep in a dry, cool place. This labour once performed, you have a desert always ready.—*Ohio Farmer.*

Raspberry Vinegar.—To every pint of vinegar put three pints of raspberries. Let them lie together two or three days; then mash them up and put them in a bag to strain. To every pint, when strained, put a pound of crushed sugar. Boil in twenty minutes and skim it. Bottle it when cold.

INFORMATION FOR INTENDING EMIGRANTS.

INFORMATION FOR INTENDING EMIGRANTS OF ALL CLASSES TO UPPER CANADA. By FREDERICK WIDDER, ESQ., Commissioner of the Canada Company. Toronto: Thompson., & Co., 1855.

This is a *fourth* edition, revised and much extended of a very useful publication; ten thousand copies of previous editions having been circulated in the United Kingdom, besides a German edition of two thousand copies.—In this small pamphlet a vast deal of the most recent and reliable information is brought together in a convenient form, adapted to the wants of intending Emigrants of all classes. It is in short just such a manual or directory as those who are looking for a home in our shores required, and its extensive circulation in Europe, under the sanction of so respectable and influential a body as the CANADA COMPANY, cannot fail in being beneficial to the country. It would be well if emigrants had always so trustworthy a guide as MR. WIDDER, whose scrupulous exactness and painstaking, evinced in the character and arrangement of so large a body of facts, are alike creditable to his judgment and industry. The free and extensive circulation of information of this kind is one of several ways in which the Company have benefitted Canada. We require no puffing, no arts of the time, to draw attention to the obvious and substantial advantages which this country offers to capital and industry. All that is needed is an honest statement of indsiputable facts, and this Mr. Widder has done in a business like and straightforward manner. We make room for the following extracts from the introduction to the present edition, although the information is of course intended for Europeans, or even Americans, more than our own people:—

"During the last three years, a combination of circumstances has caused a most extraordinary change in the relative position of everything. The price of land, of labour, of provisions,—in fact, of everything, has advanced. The inducing causes have, no doubt, been most materially the introduction of railroads,—the demand for labour arising from them,—the large amount of money disbursed for the works, and also brought to this Province for investment,—together with the high prices obtained for the past two years' harvests; to which must be added the large emigration from Europe, and of settlers from the United States, seeking this Province as their adopted home.

"These events continued to stimulate great progress in our affairs, until the effects of the Russian war acted upon the money market in England, and were more deeply felt in Canada, superinduced upon the very large importations of goods from Europe and the United State, and the great depreciation in the price of lumber.

"A check was given to our Railway Works—and remittances for investments became limited. No monetary crisis, however, arose from these occurrences—they merely caused a suspension in our rapid advancement. At the same time, the wealthy condition of the farmers, and the great demand for produce, advanced the prices of their productions, and that of wild land, and of all real estate, and affirmed the substantial position which the Province has acquired. It may be said we are simply pausing for breath, after the recent excitement, and that we are about recruiting ourselves for a new start in our career; which it is believed will be a more permanent and important one, in its results of positive progress and prosperity, than has hitherto been witnessed. But this state of transition throws embarrassment around the desire to give perfect data and unchangeable prices, such as is desired in a work of this description; for a continuance of the war, the scarcity of money, and the suspension of our public works, or bad harvests, may seriously affect the data given; on the other hand, a contrary position of those affairs, would place this Province in a most extraordinary state of prosperity. Nor should it be forgotten, that we are about reaping the advantages of an extended commerce with the United States, through the Reciprocity Act, which cannot fail to be of great importance to us.

"The views adopted in Europe, upon railroads, are not applicable to this country. *There*, railroads are the consequence of the requirements for quick and cheap conveyance of a dense population, and of its manufactures and productions; *here*, railroads are self-creative of support, by raising population,—through opening up a new and fertile country, which transmits its productions, in return for the supplies of its wants.

"The effects of railroads upon the prices of produce, will probably be, to equalise them throughout the Province; whilst it can scarcely be expected they will reduce the cost of living in the towns and ports where the railroads have their termini and depots for exportation and importation. The requisite shipping, the great trade and commerce, combined with the docks for ship-building, and manufactories, that will necessarily arise, will induce a consequent increased permanent and transient population, who must be supplied, and can well pay for their wants. Such has been the effect upon the cities of New York and Boston, and other places similarly situated. As to real estate, it must, from the same causes, be affected in a like manner, in the towns and ports; whilst farm lands will, in every manner, be greatly benefited by railroads. About five years since, the price per acre for lands in the Genesee county, and other parts of the State of New York, was from £12 10s. to £18 10s.; they are now selling at £18 to £25 per acre, including the ordinary farm-buildings; these are cleared lands, but the value of the timber would have been greater than the cost of clearing. The prices of wild lands, in Upper Canada, have undergone a very great advance, during the past three years; but, circumstanced as this Province is, and considering its comparitive small amount of population, it will not, perhaps, be taking a too sanguine view, if we anticipate, that we shall, in a year or two, approach the prices now paid in the State of New York, for lands in this section of the Province enjoying an equally fertile soil, and having the like facilities of railroad and water communications.

"It has been well observed by Professor Johnson, in a recent article of the *Journal of the Royal Agricultural Society of England*, on the relations of Geology to Agriculture in North America, that the *Peninsula* of Upper Canada, encircled by Lakes Ontario, Erie, and Huron, has a much wider expansion of those happily combined soils, which are so eminently distinguished for the growth of the finest quality of wheat, in large abundance, than even the far-famed Genesee District of the neighbouring State of New York.

"In this extensive range of country, (bounded by the great Lakes,) there is absolutely no land that is naturally sterile; and, probably, there is no other tract of equal area on the North American Continent, so well adapted, from circumstances of soil and climate, to the general purposes of agriculture. This interesting region has already been materially benefited by the opening of the Great Western, and the Ontario, Simcoe, and Huron Railways; and is rapidly settling by a persevering and industrious class of people. It will in a few years be the Garden of Canada, if not of North America.

"It is considered that the altered position of this Province will much attract the attention of a class of people possessed of considerable means; who will make Canada a home for themselves and families. With this view, some pains has been bestowed upon the educational matter,—procured from the heads of the various departments,—and which cannot fail to be of interest to those families contemplating settlement in Canada."

FISH FOR FOOD.

There is much nourishment in fish, little less than in butcher's meat, weight for weight; and in effect it may be more nourishing, considering that, from its softer fibre, fish is more easily digested. Moreover, I find there is in fish a substance which does not exist in the flesh of land animals, viz., iodine—a substance which may have a beneficial effect on the health, and tend to prevent the production of scrofulous and tuberculous disease, the latter in the form of pulmonary consumption, one of the most cruel and fatal with which civilized society, and the highly educated and refined, are afflicted. Comparative trials prove that, in the majority of fish, the proportion of solid matter—that is, the matter which remains after perfect desiccation, or the expulsion of the aqueous part—is little inferior to that of the several kinds of butcher's meat, game or poultry. And if we give our attention to classes of people—classed as to the quality of food they principally subsist on—we find that the ichthyophagous class are especially strong, healthy and prolific. In no class than that of fishers do we see larger families, handsomer women, or more robust and active men, or a greater exemption from the maladies just alluded to.—*Dr. Davy's Angler and his Friend.*

SORE TEATS.—Molasses is the very best application to heal the cracks in the teats of milch cows or the bites of the sucking calf. Wash the udder with cold water before applying the molasses. Nothing I have ever tried cures so quickly. A kicking cow is frequently cured by the same remedy, provided the milker is careful to keep short finger nails.

CISTERN BUILDING.

A good Cistern is an essential appendage to every Farm House. The mode of building is various. We find the following directions in an exchange paper:—

In the first place strike a circle about 7 feet in diameter, and excavate to the depth of from 6 to 10 inches, leaving the surface level, then within this strike another circle some 5½ or 6 feet in diameter, and excavate to the proper depth leaving the diameter at the bottom somewhat less than the top; making the sides as smooth as possible to receive the cement.

Now with 300 or 400 of what is termed hard bricks, form an arch or dome over the cistern, instead of covering in the old way with timber; this can be done by laying down the first course of bricks end to end on a layer of mortar that is somewhat thicker at the outer than the inner edge, so as to elevate the outer edges a little; now lay the second course with very little mortar between the inner edges of the bricks, and considerable between the outer edges so that the latter course shall have a greater inclination than the former by about half an inch; continue on in this way until the bricks have attained an inclination of about 45 degrees; now reverse the order of laying them, putting very little mortar between the outer, and considerable between the inner edges, until they come to lie level; the thing must be so managed as to leave an aperture at the top sufficiently large to admit a man to clean the cistern, (about 18 to 20 inches.) The mouth should be somewhat elevated, so as to bank up sufficiently to place the dome below the action of the frost, the dome must be covered with cement both inside and outside

My cistern was plastered on the bank, which I think preferable when the earth is sufficiently tenacious; one barrel of cement lime was used. Proportion for first coat —2 parts rather coarse sand, and 1 of lime; for second coat, equal parts of lime and fine sand. My cistern has been built 6 years, and there is no reason apparent why it should not endure for ages. A waste pipe should be inserted near the top, to discharge surplus water.

TO DESTROY CANADA THISTLES.—A Correspondent of the Rural New Yorker says.—It is well known to many farmers that plowing will destroy Canada thistles though there is some difference in the mode of operation. Most generally the ground is plowed four or five times during the summer, which will nearly or quite exterminate them, but my treatment of these customers I think better still. Five years ago I purchased a farm on which were a number of patches of Canada thistles. On one field of six acres they were from two to four feet high, and so much that neither grass nor anything else could grow with them. About the end of June I harrowed down the thistles and plowed them under, and the first week in July plowed the field again and sowed to buckwheat.—Harvested a good crop and some thistles; thrashed the buckwheat on the lot, and burnt the straw and chaff. I treated this field in like manner for three years in succession, seeding down with clover and timothy the last year, and have completely eradicated the thistles By sowing the buckwheat, the farmer will not only be remunerated for his labour, but there is no kind of crop so good as this to free the land from daisies, thistles, and other noxious weeds. To subdue patches growing in corners of fences and along highways, mow them off in the old of the moon (Dutch rule) in July and August. I have tried this rule and have exterminated many patches in this way.

Farmer Pennywise and Farmer Poundwise.

There is a Farmer Pennywise with whom I am acquainted, who will occasionally raise a good heifer, steer or colt, for his neighbors who keep good breeds, and he is by accident occasionally benefitted thereby When he has such an animal in his flock, he is apparently uneasy until it is disposed of; and after selling such an animal, as a heifer for instance, you may hear something like the following.

"Well, my dear, I have sold the big heifer for fifteen dollars; is that not a good price for a heifer of her age?"

"Good price indeed!" his wife would reply, "you had better have sold two of them cat-hammed, crooked legged, scrawny things that you always keep for cows. The reason that our cattle always look so bad, and that we sell so little butter and cheese is, that you always sell the best heifers."

Poor woman! I pity her; her pride and ambition are injured, her children and self in rags, because her native industry and economy are cramped by the foolish and niggardly policy of her husband.

The picture is reversed in farmer Poundwise, who always keeps his best animals until full grown; then selecting his best breeders for his own use, he sells the rest. If he had a good young horse, he will say that he will make a fine team horse; a mare she will make a fine brood mare.

"And what will you do with that?" says his neighbor, pointing to an ordinary animal.

"Between you and I," says he, "I shall sell that colt the first chance. Such an animal spoils the looks of all the rest and will not pay for his keeping."

Thus he will sell his poor steers, heifers, sheep, and pigs at the first offer. If not sold, he would fatten those that would pay the expense, and give away those that would not. Not pay the expense of fattening! Are there any cattle, sheep or hogs that will not pay the expense of fattening?—Readers, take some of each—the real Pharaoh breed—feed them until fat; keep an exact account of the expenses, and you can answer this question yourself. In this way Farmer Poundwise always has valuable stock; his steers are ready sale, and command a good price; his horses are the best in the neighborhood, and the first to be looked at by purchasers. So with all the animals he raises. Pennywise, on the contrary, is thronged with an ill-shaped, worthless stock, that none will buy or pay the expense of raising; which are continually eating out his substance and making no return. Thus Pennywise drags on a miserable life in the road to ruin, while Poundwise moves easily and happily along in the road to wealth.—*Maine Farmer.*

Tomato Preserves.—Take the round yellow variety as soon as ripe, scald and peel; then to seven pounds of tomatoes add seven pounds of white sugar, and let them stand over night. Take the tomatoes out of the sugar and boil the syrup, removing the scum: Put in the tomatoes, and boil gently fifteen or twenty minutes; remove the fruit again and boil until the syrup thickens. On cooling put the fruit into jars and pour the syrup over it, and add a few slices of lemon to each jar, and you will have something to please the taste of the most fastidious.

To Bleach Straw.—Straw may be bleached by putting it in a cask into which a few brimstone matches are placed lighted. The same effect may be produced by dipping the straw into chloride of lime disolved in water.

WASHING DISHES.

In clearing the table scrape all the plates as clean as possible and pile them, the largest at the bottom, and set them in regular rank and file around the borders of the sink or table. Put the knives and forks in a mug or pitcher, with the water just up to the handles. Arrange the cups and saucers near the dish-tub, with the spoons and all silver articles in a tray together. Place the wooden dishes by themselves. Have two wooden dish-tubs, painted on the outside, but not on the inside. Some people use milk pans or bread trays for washing dishes; but this is decidedly filthy. The dish-tub should be used for no other than its appropriate purpose, and there should be one for washing the dishes and one for rinsing them. Some people fill the dish-tub with water when they begin, and cool it to the possibility of holding their hands in it, so before they are half through it is covered with a coat of *grease* and unfit to wash a pig's trough.

It is better to take a little water at first, and make a good suds, and keep adding as it cools, both hot water and soap. Wash the spoons, and silver articles, of all kinds, and glass, before anything else is put into the water, and wipe them on a towel which is never used for anything else. Next in order come the covers and such earthen articles as are comparatively clean. Then the knives, which should have been previously wiped out of the water in which they were first immersed. Then plates, and meat and vegetable dishes. By this time an entire new water is needed, for tin and iron vessels, and especially wooden ones need a water as clean as for silver. Every towel should be thoroughly washed in suds and scalded after being once used, and the dish-tubs should go through the same process. And I have washed dishes after this fashion weeks and months and years, without a trace of the "menial labours upon my hands!

All the articles in the castor, and the salt-cellars should be washed and filled anew once a-week. And where oil-lamps are used, they should be thoroughly cleansed as often as once a-month, else the oil forms a glue upon the inside and upon the wick that prevents a clear light. Milk-pans and cream-pots, and every thing in which milk is set, should be thoroughly scalded every morning, and nothing but milk should ever soil their bright faces.

Tea pots and coffee-pots should be rinsed in clear hot water and dried, every using. Some rub all the silver in daily use with soft deer-skin, after washing, and this keeps it very bright. I have a great aversion to scouring knives, and never touch brick dust if I can help it; but if their brightness depends on me, I prefer to rub them three times a day rather than once, for it is less labour, and they last longer.

Minnie Myrtle.

Nutriment of Onions.—Prof. Johnson gives his opinion in favor of onions as a very nutritious vegetable, and for laboring men with strong digestive powers quite healthy. It is not merely as a relish that onions are used so largely by many people, but because they give strength as well as a satisfaction of appetite. Prof. Johnson ranks onions in point of nutriment with peas.

IT CAN'T BE HELPED.

"Can't be helped," is one of the thousand convenient phrases, with which men cheat and deceive themselves. It is one on which the helpless and idle take refuge as the last and only comfort—it can't be helped. Your energetic man is for helping everything. If he sees an evil, and clearly discerns its cause, he is for taking steps forthwith to remove it He busies himself with ways and means, devises practical plans and methods, and will not let the world rest until he has done something in a remedial way. The indolent man spares himself the trouble. He will not budge. He sits with his arms folded, and is always ready with his unvarying observation, "It can't be helped," as much as to say—"If it is, it ought to be, and we need not bestir ourselves to alter it," Wash your face you dirty little school boy: you are vile, and repulsive, and vicious, by reason of your neglect of cleanliness. "It can't be helped." Clear away your refuse, sweep your streets, cleanse your drains and gutters, purify your atmosphere, you indolent corporations, for the cholera is coming. "It can't be helped!" Educate your children, train them up in virtuous habits, teach them to be industrious, obedient, frugal and thoughtful, you thoughtless communities, for they are now growing up vicious, ignorant and careless, a source of future peril to the nation. "It can't be helped." But it can be helped. Every evil can be abated, every nuisance got rid of, every abomination swept away; though this will never be done by the "Can't-be-helped" people. Man is not helpless, but can both help himself and help others. He can act individually and unitedly against wrong and evil. He has the power to abate and eventually to uproot them. But, alas! the greatest obstacle of all in the way of such beneficial action, is the feeling and disposition out of which arises the miserable, and idle ejaculation of "It can't be helped."

CHEAP SOAP.

A correspondent of the "Southern Banner" gives the following recipe for soap-making, and adds, that it would be worth a thousand pounds in the hands of a selfish person, and the world would have to untie the purse string to get at it, but here it is free gratis :

Take six pounds of potash - - - - -	75
Four pounds of lard - - - - - - -	50
One-fourth pound of rosin - - - - -	25
All amounting to - - - - - - - -	$1 50

Beat up the rosin, mix all together well, and set aside for five days, then put the whole into a ten gallon cask of warm water and stir twice a day for ten days, at the expiration of which time, or sooner, you will have one hundred pounds of excellent soap for one dollar and a half.

COURTESIES OF LIFE.—In our intercourse one with another, there are many little ways which we may assume without imputation of littleness or foppishness. A smile, a cordial bow, an earnestness of manner in addressing a friend or more especially a stranger, costs but a slight effort, and generally will ensure a corresponding pleasantness, even from the ill tempered. This would be but a melancholy world if all the courtesies of life were disregarded and a sulky, mistaken kind of straightforwardness adopted.

HOUSEHOLD MEASURES.

As all families are not provided with scales and weights referring to ingredients in common use by every housewife, the following may be useful:—

Wheat flour, one pound is one quart.

Indian meal, one pound two ounces is one quart.

Butter, when soft, one pound one ounce is one quart.

Loaf sugar, one pound is one quart.

White sugar, powdered, one pound one ounce is one quart.

Best brown sugar, one pound two ounces is one quart.

Eggs, average size, ten eggs are one pound.

Sixteen large table-spoonfuls are half a pint, eight are one gill, four half a gill, &c.

NUTRITIVE QUALITIES OF MILK.—In the Medical Convention, lately in session at Philadelphia, Dr. N. S. Davis, of Chicago, presented a report on the nutritive qualities of milk, and also on the question whether there is not some mode by which the nutritive constituents of milk can be preserved in their purity and sweetness, and furnished to the inhabitants of cities in such quantities as to supersede the present defective and often unwholesome modes of supply. The report says that when railroads were opened into the interior of the country it was said that milk would be furnished to the residents of cities in the purity that was found on farms, but a sufficient time has elapsed to demonstrate that such is not the case. The conveyance of the milk from the farm to the cars, the transit on the railway, and the time lost in its delivery throughout the city, it was clearly shown, had the effect of making it unfit for the nourishment of a child. During the past half century, experiments had been made with a view of preserving milk in its pure state; yet it was but recently that a discovery was made, by a gentleman in New York, which was to evaporate the water and mix with it white sugar, which rendered it what is termed solidified milk. In his practice he had used this improved milk for the nourishment of infants with the most gratifying results, and after having kept it for three months; and he knew of its having been kept twelve months without any injury to its qualities.

SIMPLE REMEDIES.—Cotton wool, wet with sweet oil and paregoric, relieves the ear ache very soon.

Black or green tea steeped in boiling milk and sweetening with loaf sugar, is excellent for the dysentery.

A good quantity of old cheese is one of the best things to eat when distressed by eating too much fruit, or oppressed with any kind of food. Physicians have given it in cases of great danger.

Blackberries are extremely useful in cases of dysentery to eat the berries is very healthy Tea made of the roots and leaves is very beneficial, and a syrup made of the berries is still better.

Whortleberries, commonaly called huckleberies, dried, are a useful medicine for children. Made into tea and sweetened, they are very beneficial when the system is in a restricted state, and the digestive powers out of order.

THE HIVE AND HONEY BEE.—The Rev. L. S. Langstroth a writer of some note on Bees, says.—Many persons have not the slightest idea that *every thing* may be *seen* that takes place in a bee hive But hives have for many years been in use, containing only one large comb, enclosed on both sides by glass. These hives are darkened by shutters, and when opened, the queen is exposed to observation as well as all the other bees. Within the last two years, I have discovered that with proper precautions, colonies can be made to work in observing hives, without shutters, and exposed continually to the *full light of day*; so that observations may be made at all times, without in the least interrupting the ordinary operations of the bees. By the aid of such hives, some of the most intelligent citizens of Philadelphia have seen in my Apiary, the queen bee depositing her eggs in the cells, and constantly surrounded by an affectionate circle of her devoted children. They have also witnessed, with astonishment and delight, all the steps in the mysterious process of raising queens from eggs which with the ordinary development, would have produced only the common bees For more than three months, there was not a day in which some of my colonies were not engaged in making new queens to supply the place of those taken from them, and I had the pleasure of exhibiting all the facts to bee keepers who never before felt willing to credit them As *all* my hives are so made that each comb can be taken out, and examined at pleasure, those who use them, can obtain from them all the information which they need and, are no longer forced to take any thing upon trust.

LOSS OF STOCK IN OHIO.—The losses of sheep and cattle from starvation have been very extensive throughout the northeastern section of Ohio Many a flock-master has lost from 200 to 500 sheep, while dairymen have lost from 30 to 40 cows each, in some localities. In a number of counties the losses were very general, and it will require years for some farmers to recover from the damage sustained in consequence of the severe drouth of last season, and the hard winter which followed. It is estimated that in the section named—say one fourth of the State full two thirds of the sheep, and one half the cattle have died during the winter, a loss which is very large in the aggregate, and must greatly affect the interests of the farmers, and the prosperity of that portion of the State.

HEDGE OR LIVE FENCE.—Efforts to establish a permanent hedge of various plants in England with so much success, have failed in the dry, hot climate of the United States. Numerous plants, indigenous to our country, have also been tried with no better success, until Professor J. B. Turner, of Illinois College, introduced the Osage orange from the wilds of Texas. His success has induced other farmers upon the western prairies, and also in the timbered portions of the country to make trial of this plant for hedging purposes. These experiments have established beyond a doubt the perfect adaptation of this plant to the purpose of live-fence in our climate. Owing to its peculiar growth, both root and branch, it is not affected by the heat and drought of our summers, as the tap rooted plants are which form the beautiful hedges of England. A few weeks since the editor of the Louisville Journal visited the farm of Mr. James McGrew, of Montgomery county, Ohio, for the purpose of examining a most perfect specimen of this hedge. The plants have been set four years, and the hedge is now so compact and broad at the ground that neither fowl nor pigs can pass it, and so high that the most unruly animal would not attempt to jump it.

THE BEVERAGES WE INFUSE.—Infused beverages are drunk hot, fermented drinks are usually taken cold The love of such warm drinks prevails almost universally. In frozen Labrador and snowy Russia, the climate might account for this predilection; but the craving is really deeper seated. The practice prevails equally in tropical and in arctic regions. In Central America the Indian of native blood, and the Creole of mixed European race, indulge alike in their ancient chocolate. In Southern America the tea of Paraguay is an almost universal beverage. The native North-American tribes have their Apalachian tea, their Oswego tea, their Labrador tea, and many others. From Florida to Georgia in the United States, and all over the West India Islands, the naturalised European races sip their coffee; while over the Northern States of the Union, and in the British provinces, the tea of China is in constant and daily use. All Europe, too, has chosen its prevailing beverage. Spain and Italy delight in chocolate; France and Germany and Sweden and Turkey, in coffee; Russia, Holland, and England in tea; while poor Ireland makes its warm drink of the husks of the cocoa, the refuse of the chocolate mills of Italy and Spain. All Asia feels the same want and in different ways has long gratified it. Coffee, indigenous in Arabia or the adjoining countries, has followed the banner of the prophet, wherever in Asia or Africa his false faith has triumphed. Tea, a native of China, has spread spontaneously over the hill country of the Himalayas, the table lands of Tartary and the plains of Siberia—has climbed the Altais, overspread all Russia, and is equally despotic in Moscow as in St Petersburg. In Sumatra, the coffee leaf yields the favourite tea of the dark-skinned population, while Central Africa boasts of the Abyssinian *chaat* as the indigenous warm drink of its Ethiopian people Everywhere unintoxicating and nonnarcotic beverages are in general use, among tribes of every colour, beneath every sun, and every condition of life. The custom, therefore, must meet some universal want of our poor human nature.—*Professor Johnston's Chemistry of Common Life.*

TUNNEL UNDER THE NIAGARA RIVER.—William Wallace the distinguished railroad engineer, who has been prominent in railroad enterprises in Western New York, has submitted a project for tunnelling the Niagara at Buffalo, for railroad and other purposes. The work is a feasible one, and in view of the increased commercial and general business relations between the United States and Canada, an important one. It is proposed to be at the term nation of the Buffalo and Brantford railway. In England railroad tunneling is a matter of common occurrence. The Kilsby Tunnel, on the London and Birmingham railway, is over a mile and half in length. There are eight tunnels on the Manchester and Leeds railway, in a distance of sixty miles, one of these at the summit, being one mile and five eighths in length. On the Liverpool and Manchester railroad there are three tunnels; one of them is six thousand six hundred feet long The Abbot Cliff tunnel is six thousand six hundred and nine feet long, and between Manchester and Huddersfield there is a tunnel through Blackstone ledge three miles long.

THE POWER OF LOVE.—Love is the spring and spirit of the universe. Thank God, it is, notwithstanding our depravity, the strongest force in our nature. It greets us into life; in its warm caresses we spend the childhood of our days, and through each successive period to the grave, it appears to us in a thousand angel forms, soothing us with its tender words, blessing us with its gifts, and brightening our path with its smiles.—*Literary Journal.*

INFLUENCE OF ARDENT SPIRITS.—In the ardour of this crusade against fermented liquors, statements have been made by over zealous champions of total abstinence, which are not quite borne out by chemical and physiological researches. Ardent spirits of every variety are little else than alcohol diluted with a large proportion of water, and flavoured with a minute admixture of volatile oil, the precise action of which upon the system is not known. They contain none, therefore, of the common forms of nutritive matter which exist in our usual varieties of animal and vegetable food. It does not follow from this, however, as some have too broadly alleged, that they are incapable of serving any useful purpose in the animal economy. On the contrary, it is ascertained of ardent spirits—First, That they directly warm the body and by the changes they undergo in the blood, supply a portion of that carbonic acid and watery vapour which, as a necessity of life, are constantly being given off by the lungs. They so far, therefore supply the place of food, of the fat and starch for example, which we usually eat. Hence a schnapps, in Germany, with a slice of lean dried meat, make a mixture like that of the starch and gluten in our bread, which is capable of feeding the body. So we either add sugar to milk, or take spirits along with it (old men's milk), for the purpose of adjusting the proportions of the ingredients more suitably to the constitution or to the circumstances in which it is to be consumed. Second, That they diminish the absolute amount of matter usually given off by the lungs and kidneys. They thus lessen, as tea and coffee do, the natural waste of the fat and tissues, and they necessarily diminish, in an equal degree, the quantity of ordinary food which is necessary to keep up the weight of the body. In other words, they have the property of making a given weight of food go further in sustaining the bulk of the body. And, in addition to the saving of material thus effected, they ease and lighten the labour of the digestive organs, which, when the stomach is weak, is often a most valuable result. Hence, fermented liquors, if otherwise suitable to the constitution, exercise a beneficial influence upon old people, and other weakly persons whose fat and tissues have begun to waste, in whom the process of digestion, that is, does not replace the tissues as fast as they naturally waste.—*Chemistry of Common Life.*

CLARIFYING MAPLE SUGAR.—A Vermont farmer says the following is a sure method of clarifying maple sugar. Filter all your sap before boiling, through a hopper or box of sand, which will take out, not only the stains derived from leaves, tubs, crumbs of bark, but all other coloring matter that can prevent the sugar from being pure white. We doubt whether sand can remove the coloring matter of the sugar, but the method is simple, and it will cost little to try it.

ENGLISH GUNPOWDER.—On first straying amidst the Syrian hills with a gun in my hand, I was puzzled by the manner in which I was frequently accosted by the people. Some times a man would run towards me, and suspecting very naturally that I understood a little Arabic, he would earnestly repeat the one word *baroot* [gunpowder). Imagining he asked if I came from Beirout, I answered *etwa* (yes), which, of course, caused him to expect he was about to receive some of the coveted commodity. There are no words that one sooner learns in Syria than *baroot* and *ush* [powder and shot], and even the smallest quantity of our finely-ground "canister" is much desired to prime the firelocks, the Arab powder being generally as large, and sometimes larger in the grain than wheat.—*Journal of Eastern Travel in Hogg's Instructor.*

WASHING WINDOWS.—A correspondent of the American Agriculturist gives the following improved mode of washing windows, which, although not new to us, may be valuable to many of our readers :—

"The nicest article for washing windows is deer-skin, as no particles come off to adhere to the glass and make it look as if washed with feathers. There is no need of any thing larger than a hand-basin for washing windows. The great splashing some people make in the exercise of their art is entirely useless, and is, moreover deleterious When the water is permitted to run down in great quantities upon the glass, it dissolves the putty and soon loosens the panes from their setting and also stains the glass. Two pieces of nice wash leather and a bowl of suds are all that are necessary. Wipe the glass first with the wet cloth or leather, and after it has become dry, with the clean cloth, and it will look clear, and far more so than if rinsed in a dozen pails of water."

TASTE OF TURNIPS IN BUTTER.—A correspondent at Philadelphia writes us that he had abandoned the use of turnips as feed for milch cows on account of the disagreeable taste imparted to the milk and butter. He met with the following easy method of removing this objection, and has practised it for five years with perfect success, both with common flat turnips and with ruta bagas :—slice the turnips 12 hours before they are wanted, put them in a heap or basket, and sprinkle over them a slight coating of fine salt. After they have lain in a heap 12 hours, mix them well together and give to the cows.—*Country Gentleman.*

RE-CHURNING BUTTER.—The neighbours of a certain lady in the Fourth District of New Orleans, have recently discovered something that has seemed a miracle, for months past. They knew the lady had but one cow, says the *Crescent*, and they knew also, that the lady's two little negroes peddled as much Creole butter daily as could be produced by half a dozen common cows. Inquisition got so high on the subject at last, that the lady has let out the secret, and in its travels it has reached us. She told a friend that her cow was only a common cow, and did not produce any butter, but yielded milk enough in which to re-churn any quantity of strong Goshen butter, which she buys by wholesale at the groceries, and converts by the said re-churning in new milk, to that pale sweet delicacy, known as Creole butter, which always commands the highest of prices. She added also, that by this process she had made a clear profit, since June last, of *twelve hundred dollars!* One cow is not much, but one cow and Yankee ingenuity together are considerable. Our authority in this matter is indisputable, and the speculation is worth imitating.—*Petersburgh Express.*

INDIAN LIGHT BISCUIT.—A quart of Indian meal a pint of sifted wheat flour ; a very small teaspoonful of salt ; three pints of milk ; four eggs.

Sift the Indian and wheat meal into a pan, and add the salt. Mix them well. Beat the whites and yolks of the eggs separately. The yolk must be beaten until very thick and smooth ; the whites to a stiff froth that will stand alone of itself. Then stir the yolks gradually. [a little at a time] into the milk Add by degrees the meal. Lastly, stir in the beaten white of egg, and give the whole a long and hard stirring. Butter a sufficient number of cups, or small deep tins—nearly fill them with the batter. Set them immediately into a hot oven, and bake them fast. Turn them out of the cups. Send them warm to table, pull them open, and eat them with butter.

They will puff up finely, if at the last you stir in a level tea-spoonful of soda, melted in a little warm water.—*Extract.*

WHITEWASH FOR OUTHOUSES AND FENCES.—We find the following in some of the agricultural papers, credited to the *Scientific American*. Credit should have been given to 'Downing's Country Houses," from which it is taken :—

As this is the season of the year when considerable whitewashing is performed, and as we have been inquired of for a good whitewashing receipt by numbers of new subscribers who have not read our receipt in a former volume, we present it again, knowing that a good story is never the worse to be twice told :—

Take a clean barrel that will hold water. Put into it half a bushel of quicklime, and slack it by pouring over it boiling water sufficient to cover it over four or five inches deep and stirring it until slacked. When quite slacked dissolve it in water, and add two pounds of sulphate of zinc, and one of common salt, which may be had at any of the druggists, and which in a few days will cause the whitewash to harden on the wood-work. Add sufficient water to bring it to the consistency of thick whitewash.

To make the above wash of a pleasant cream color, add 3 lbs yellow ochre.

For fawn color, add 4 lbs. umber, 1 lb. Indian red, and 1 lb. lamblack.

For grey or stone color, add 4 lbs. raw umber, and 2 lbs. lampblack.

The color may be put on with a common whitewash brush and will be found much more durable than common whitewash

FOUR SPANISH PROVERBS.—What the fool does in the end, the wise man does in the beginning.—Voltaire defined a physician as an unfortunate gentleman, expected every day to perform a miracle namely, to reconcile health with intemperance.—The most insignificant people are the most apt to sneer at others; they are safe from reprisals, and have no hope of rising in their own esteem but in lowering their neighbours.—All vice stands upon a precipice; to engage in any sinful course is to run down the hill; if we once let loose the propensities of our nature we cannot gather in the reins and govern them as we please, it is much easier not to begin a bad course then to stop when begun.

TO MAKE JOHNNY CAKE.—Having used the following receipt for making Johnny Cake, we consider it excellent, and worthy an insertion :—1 pint meal; 1 pint flour; 1 pint sweet milk; 2 eggs; ½ tea cup sugar; 2 teaspoonfuls cream tarter; 1 teaspoonful sup. soda. Stir the cream tartar in the flour, and the soda in the milk. Bake in tins in a quick oven. —S. S., *Milan Ohio.*

MOWING MACHINES VS. SCYTHES.—Now let us compare a little, the two modes of cutting grass. Day laborers, hired at $1 per day, will probably mow in medium grass 1½ acres to the hand; that is, it will cost $5 or $6 to mow 8 acres, and 25 cents each hand for boarding will be $1,50 more, which, added to $1,50 makes $7 for mowing 8 acres. Now hire a man with a span of horses and a machine to cut the 8 acres, at 50 cts per acre, and he will cut it in a day —$4,00, and $1.00 more will pay their boarding, making in all $5.00, and the grass will be spread better for curing than a man will spread it after the 5 hands, which, in the estimate, will make $3.00 advantage to the mower. At that rate, the machine will pay for itself in 40 days' mowing, besides saving so much hard labor.—JOS. MOSHER, *in Ohio Farmer.*

Editorial Notices.

TO CORRESPONDENTS.—We regret to state that the letters of one or two correspondents, and particularly one on the subject of unburnt Brick Houses have been mislaid or lost. If our friend, the writer of the last, thinks the matter of his communication of sufficient importance to reproduce it, we shall be happy to insert it next month. Mr. Farmer's communication on the subject of the dispute between the Ingersol Branch Agricultural Society, and the County of Oxford Society was, by mistake, not put in type until the forms were ready for press. It will appear next month. Mr. Jone's remarks on Stawberries, will receive attention in our next.

DEVON HERD BOOK.

We beg to inform our readers that a parcel of these Books are now at our office, and copies can be sent, to those who wish them, on application. The price is $5. See the advertisement.

IMPORTATION OF SHORT HORNS INTO CANADA.

We are informed that Mr. GEO. ROBSON of London, C. W., has recently purchased some very fine animals from the excellent and well known herd of Mr. L. P. CHAPMAN, of Clarkville, Madison County, N. Y. Two Heifers, *Fashion* 2d, and *Fashion* 3d, are descendants from Mr Vail's celebrated *milking family* of short horns; the "*Willey*" Fashion 3d, has brought a beautiful roan bull calf. Fashion 2d is a very superior milker. Mr. Robson has likewise procured from the same herd, a *Bates's* heifer calf Agati 2d dam imported Aguti, and sired by Halton, (11552.) Also another heifer calf, *Duchess*, (514) Dam Duchess, and sired by Halton.

It is pleasing to see most excellent blood introduced into Canada, and we have no doubt that Mr. Robson will meet with that degree of encouragement which his enterprise deserves.—*B.*

JOURNAL OF TRANSACTIONS OF THE BOARD OF AGRICULTURE OF UPPER CANADA. Nos. 1 & 2 vol. 1 Toronto: Thompson & Co. 1855.

For some time past a strong desire has been expressed that the Board of Agriculture should publish periodically its transactions, incorporating therewith the Prize Essays which are annually obtained, and a condensed statement of the condition of each Agricultural Society receiving Government aid, compiled from the annual Reports, which by law, have to be prepared and sent to the Board. The two numbers already published contain a history of the Provincial Association from its commencement, the establishment of the Board, a synopsis of the various agricultural statutes, bringing these matters down to the Provincial Show at Hamilton, in 1853. It is intimated that the next two numbers, completing the

first volume, will embody all matters to the termination of the present year, and that in future the information and papers composing the journal will be of greater and fresher interest. In compiling a work of this kind, a duty involving no inconsiderable deal of care and trouble, different opinions will obtain as to the extent in which the materials are to be abridged. A sort of medium seems to have been adopted—the computations and comments without being too laconic so as to leave an imperfect impression after perusal, are sufficiently diffuse for all practical purposes. The work is not intended to interfere with the circulation of such periodicals as the *Agriculturist*, most of its articles being too long, and in other respects unsuitable to our pages. The subscription for the year is one dollar; sufficiently low when it is considered that the annual volume will consist of not less than 640 octavo pages.—*B.*

Outlines of Flemish Husbandry, as applicable to the improvement of Agriculture in Canada. Quebec: Republished by the Bureau of Agriculture, 1855.

This very valuable work was originally published by the Society for diffusing useful knowledge, and was written by the late lamented Rev. W. L. Rham, a parish Clergyman in Berkshire, who was, we believe, a native of the Netherlands, and occupied in England during a period of many years a prominent position as a writer on agricultural subjects. Mr. Hutton, the indefatigable Secretary of the Bureau of Agriculture and Statistics, informs us in the preface, that the work was strongly recommended to the *Bureau* for re-publication in this Province, by Robt. S. Atcheson, Esq. "It contains a fund of information, valuable to the whole country, but especially to the Lower Province, from the similarity of the habits, character, and circumstances of the people to those of the natives of Flanders,—a similarity extending in many instances, even to the soil, extent and nature of their farms."

The work consists of seventeen chapters—one of which we were enabled by the kindness of Mr. Hutton, to publish in the *Agriculturist*, a few numbers back. A large edition both in French and English has been printed for distribution. Whether it can be procured of the booksellers we are not informed; but from the large numbers printed for gratuitous distribution, their will be little or no difficulty we presume, in any person interested in the subject, obtaining a copy. We are glad to perceive several signs of increased activity in the Bureau, in promoting the public good, and the present attempt to diffuse far and wide amongst the tillers of the soil, so excellent and in many respects opportune a work, is an evidence of sound judgment and healthful progress, in the most important direction.—*B.*

Chambers's Journal, July, 1855. A. H. Armour & Co., Toronto.

This part completes the third volume of this world-renowned periodical. We have no space to particularise. Suffice it to say that the Messrs. Chambers never give insertion to a single article in their Journal that is not worth reading, and many of their papers possess high literary and scientific merit, adapted to the wants and tastes of the thinking portion of the community. Rational amusement combined with sound instruction, characterises every number of this truly popular periodical, which ought to find a place in every well ordered family. The *Edinburgh* edition, which is greatly superior in the "getting up" to the American reprint, can be obtained monthly of Messrs. Armour & Co. of this city, or of any of the principal booksellers in the Province, within about a fortnight after its publication in Britain, at the remarkably low charge of ten shillings per annum.—*B.*

The Canadian Literary News Letter, No. 6 vol. 1. Montreal: H. Ramsey. Toronto: A. Armour & Co., 1855.

This monthly serial is of much convenience and utility to all persons who may be in some way or other,—*(and who now-a-days is not?)*—interested in books. Each number contains a list of publications with their prices attached of all works issued in in the preceding month in Europe and the United States, with a number of reviews and notices of the more important works. To Clergymen, Schoolmasters, Officers of Mechanic's Institutes, and we may also add, of *Agricultural Societies*, who must not in the present age lag behind other bodies in these matters,—"*The Canadian Literary News Letter*" will be found of much service. The publishers we are informed will forward it to individuals interested in books and literary subjects, upon receiving a prepaid application, *without charge*. A pleasing fact this, showing that the Book-trade has reached a status in this Province to which it was an entire stranger a very few years since.—*B.*

The Anglo-American Magazine for July. Toronto: Maclear & Co., 1855.

This No. completes the seventh volume of this interesting native production. The present number is embellished by a portrait of Mr. Robert Stevenson, the world-renowned Civil Engineer, and an engraving of the Tubular Bridge over the St. Lawrence at Montreal, for the Grand Trunk Railway. These productions are highly creditable to Mr. Maclear's establishment, affording the most satisfactory evidence of the rapid progress which this department of art is making among us. The literary articles, of which there is a good variety, will be read with interest.—*B.*

MORTON'S CYCLOPEDIA OF AGRICULTURE—parts 27 & 28. Blackie & Son, Glasgow, Edinburgh & London. Toronto: Maclear & Co,

These two parts complete, his original and valuable work, making two handsome volumes, illustrated with upwards of a thousand Engravings in wood and steel. The work is "got up" in the Messrs. Blackie's best style, and its pages are enriched by the contributions of a large number of the best practical agriculturists and Scientific men, the United Kingdom can produce. Altogether it is unquestionably *the best exposition* of the condition of British Agriculture, both in its science and practice, to be found in the English or any other language. To the enquiring and improving farmer it will form an invaluable acquisition, and many portions of it may be consulted with pleasure and advantage by the general reader.—*B.*

Market Review.

MARKETS, &c.

TORONTO, August 1, 1855.

Harvest having commenced in all parts of the country adjacent to Toronto, the usual supply of produce brought into the market by farmers has been much less than formerly, and a general dullness pervades the market. The wet weather with which we were visited during last week, it was feared, would do much to injure the growing wheat crop; but we are happy to hear that the damage was not so great as was anticipated—at least in the neighbourhood—and that, notwithstanding the long winter, the weevil, the Hessian fly, and the rainy season, the fall crop in the vicinity of Toronto will be an average yield. Spring crops, too, generally look well, and promise an abundant return.

FLOUR.—The flour market has been poorly supplied, and prices have remained firm. Sales have taken place, for immediate consumption only, at $9 for good brands—and that figure can be realized for all that will be brought in. There has been but very little farmer's flour selling at retail in the market, and none at all for the last four days; but it would probably bring $9 @ 9¼ for good kinds. There is hardly any milling going on in the country at present—the mills are nearly all undergoing repair for the fall trade—while some are enlarging and increasing their facilities for grinding. It is said that the market for new flour will open at $9 per bbl, and will be readily bought at that. It may be the case with the first lots offered; but as soon as the supplies come down from the west, and reach the Atlantic cities, that figure will hardly continue to be paid. It is likely that new flour will come in by large lots, as soon as it can be thrashed and ground, so as to realize present high prices. The price of flour to-day may be quoted at $9, and is held firmly at that. Spring wheat flour, of an inferior quality, has been purchased at $3 per bbl. from farmers' waggons. The shipments of flour for the month foot up to 5990 bbls, the greater part of which has been in store for some time. There are not over 800 bbls. in store here at present.

WHEAT.—The granaries within forty miles of Toronto appear at last to be exhausted, and it is a matter of surprise that the supply has lasted so long. There has been no wheat of any kind in the market for the last five days, and there will not likely be much more of the crop brought forward. The supply has been gradually diminishing—there being only 11,788 bush. purchased in the month of July hardly as much as was brought in each week of April and May. The average price for the month may be said to be 9s 4d per bushel; and whether that figure will be offered for the new crop, it would be impossible at present to say. The demand, however, is still active; and, as in flour, the first lots offered will likely bring a good price. The matter will soon be tested, and probably we will have samples of the new crop offering within the two next weeks. The shipments of wheat for the month amount to 12,882 bushels—mainly to Oswego and Cape Vincent. There is very little in store at present, and it is probable all that is here will be required for milling purposes.

OATS—Have been scarce, and, but for a small lot brought down from Chicago, the market would have been bare. This lot sold at 3s 3d @ 3s 7d per bush. There have been only a few loads brought in by farmers, and were sold at rather a higher figure. There were some offering to-day at 4s, but were held too high to suit buyers—they only bidding 3s 6d ℔ bush. The new crop is heading out finely; and as there is a good breadth sown, large supplies may be soon expected. Prices will probably improve until the new crop comes in.

HAY—Has been rather plenty, and an active demand makes business brisk. Old, of good quality, brings from $25@30 per ton, and new $15@25. The samples of the new crop already brought in are rather inferior—it being probably injured by rain, and brought in for immediate consumption, as it would "heat" if allowed to remain long in the barn. During the past month, 144 loads of hay have been purchased on the market. This month is the dullest in the year, and is not a criterion of the amount usually bought.

WOOL—This staple is still poorly supplied, and although the demand is active, prices have not improved. That bought during the week has been got for 1s 1d @ 1s 2d ℔ lb. Farmers are too much engaged at present to bring wool forward, and no great amount may be expected until after harvest.

POTATOES—Of the old crop, are no longer to be bought on the market, they being among the things

that were. They have been succeeded by plentiful supplies of the new crop, which generally are of a good quality, and, as a sample, promise well for the whole yield. They bring from 6s @ 8s per bush, and are in demand.

BUTTER—Has been better supplied during the week, but is still in great demand, at 1s @ 1s 3d per lb.

BEEF—Is still plentiful, and prices have declined. Good beeves were bought at $5½@6½ per cwt. during the week. Milch cows bring $27. and cows with calves $30. They are plentifully supplied, and are not in demand. Calves bring $4½ @ 5.

NEW YORK MARKETS—AUG. 1.

FLOUR—Market firm, with better demand Sales 6,000 barrels at $7 87½ @ $8 25 for common to straight and extra State, and $8 @ $8 62½ for mixed to fancy Western Canadian—Sales 1,200 barrels at $8 25 @ $9 62½

WHEAT advanced 3 @ 5 cts per bushel. Sales 1,000 bush. at $1 78 @ $1 85 for red southern, and $1 95 @ $2 15 for white do.

RYE held higher.

CORN lower Sales 40,000 bushels, at 83½c @ 87½c or mixed Western.

OATS steady—58c for State and Western.

CHICKENS—Bring 3s 4d @ 3s 9d per pair, and ducks 2s 6d, and are not plenty.

CHERRIES—Sell at 6d, and black currants at 5d per qrt., and are in demand for preserving.

EGGS—Are also more plenty, and bring 11d @1s 2d per dozen.

PROVISIONS.—Pork firmer. Sales 400 barrels at $19 68 @ $19 75 for mess—$16 62½ for prime.

STOCKS active and better. Money plenty and easy at 6 per cent on call, and first class paper. Sterling exchange dull at 110. Erie R. R. 52.

LARD unchanged.

SUFFOLK PIGS,

(Directly from Imported Stock.)

THE Subscriber offers for sale, a few of these incomparable Pigs, singly, or in properly selected pairs.

PATRICK R. WRIGHT.

CASTLETON FARM,
Cobourg, C.W., July, 1855. 8—tf.

PURE DOWN SHEEP.

JUST Received from England, a fresh supply of the latest improved breeds of SOUTH DOWN SHEEP, of the Hampshire and Sussex breeds, selected with much care and expense, by my son in England, from the best flocks of Dorset's, Hant's, Mr. Jonas Webb's and the Duke of Richmond's.

JOHN SPENCER.

DORSET FARM, Whitby, July, 1855.

TO BE SOLD,

The Property of the East Zorra Agricultural Society:

A Fine Agricultural Stallion

16 hands high, dark dappled bay with black mane, tail, and legs by Old Clyde, out of a Cleveland mare He is five years old this month, and has taken 6 first and 1 second prizes at different Shows For particulars apply to the Secretary of the East Zorra Agricultural Society, Woodstock.

Woodstock, July 18th, 1855. 8-3

GALLOWAY BULLS FOR SALE.

THE Subscriber will offer for sale at the Provincial Exhibition, to be held at Cobourg, 2 PURE BRED BULL CALVES, from imported cows; also, 4 IMPORTED CHEVIOT RAMS, to be seen at the premises of the subscriber, near Cobourg.

WILLIAM RODDICK.

Cobourg, June, 1855. 7.

DAVY'S DEVON HERD BOOK,

NOW ready, a LARGE SUPPLY of both 1st and 2nd vols. bound in one book, and containing all the subject connected with the Devon records, of both England and America up to the present time; also as a frontispiece, the beautiful engraving of the celebrated picture known as the "Quarely Testimonial" which is a full length portrait of Mr. Francis Quarely, now living, at 91 years of age. It is also illustrated with two animals, Prize-winners in England. Price, $5, can be had by enclosing the amount to B. P. Johnson, Cor. Sec. of N. Y. State Society, Albany, N. Y., Luther Tucker, Ed. of *Country Gent*, Albany N. Y., Sandford Howard, Boston, Mass., D. D. T. Moore, Ed. of *W. G. & S. Register* N. Y., A. B. Allen, Ed. of *American Agriculturist*. N. Y., Saml. Sands, Ed. of *American Farmer*, Baltimore, Md., A. M. Spangler, Ed. of *Progressive Farmer*, Philadelphia, Pa., Lee and Redmond, Eds. of *Southern Cultivator*, Augusta, Ga., and Wm McDougall, Ed. of *Canadian Agriculturist*, Toronto, C.W. It gives me pleasure to state that Mr. Davy has solicited Mr. S. Howard, of the *Boston Cultivator*, to collect pedigrees and illustrations in this country for the 3rd. vol., and has authorised Mr. H. to obtain information as to any and all mistakes which may have been made as to the recording of American animals in Davy's 2nd. vol, and such corrections will be made in the 3rd. vol. The Plan proposes that a copy of all the pedigrees and illustrations collected by Mr. H, as the Editor in America, shall be forwarded to Mr. Davy, and a copy of those collected by Mr. D. will be sent to Mr. H. in this country. The whole matter will be published in America for our use, and in England for their use, by which means an American and English Devon Herd Book will be united, and the price reasonable, as the expense of English printing and duties will be saved. This concert of action has been brought about by Mr. Davy's good feeling and liberality towards this country; and I am only the instrument through which Mr. Davy acts; and from this time forth Mr. Howard will receive all communications on the subject, as will appear by reference to his advertisement.

All Editors who will give the above three insertions, will receive a copy of the 1st 2nd and 3rd vols.

L. G. MORRIS,

Agent for J. Farmer Davy's Devon Herd Book.

ENGLISH CATTLE
IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,
Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs. BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commission Charged.

Horse,	each,	$30
Bulls or Cows,	"	6
Ram or Ewe,	"	3
Three Sheep from the same owner,	each,	2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner,	each,	22
Ten " "	"	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses, &c., as follows:

Horse,	each,	$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer provision for 30 days.

Horse,	each,	$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels, provision for 60 days

Horse,	each,	$70
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and to Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

Breed.	Horse.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel.	If insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

		$.	$.	$.
Thorough Bred Horses, from		100 to	200	120
Short Horn or Durham Bull		40 "	150	700
Do	Cows	200 "	800	400
Do	yearling Bull	20 "	100	50
Do do	Heifer	175 "	400	250
Herefords	Bull	300 "	800	500
Do	Cows	200 "	600	250
Devons	Bull	300 "	800	400
Do	Cows	200 "	500	250
Ayrshire	Bull	150 "	300	300
Do	Cows	100 "	250	200
Alderney	Bull	150 "	225	175
Do	Cows	100 "	150	125
			Will weigh when killed and dressed	Will shear of washed wool
Cotswold Sheep	Ram	100 to	300 lbs	12 to 15lbs
Do	Ewe	25 "	100	30
Leicester Sheep	Ram	100 "	200 lbs	10
Do	Ewe	20 "	80	25
South Down Sheep	Ram	150 "	300 lbs	12 to 9lbs
Do	Ewe	25 "	100	30
Hampshire do	Ram	75 "	125 120lbs	1 0 6to10lbs
Do	Ewe	15 "	25	20
Swine	Boars	25 "	50	40
Do	Sows	15 "	40	25
Merino Sheep from Spain				
Mules from Spain.				

5

THOROUGH BRED SHORT-HORNS.

THE Subscriber offers for sale, 3 Thorough Bred Short-Horn Durham Bull Calves, descendants of the celebrated Bull, "Bellville," champion of England, Ireland and Scotland.

RALPH WADE Snr.
Spring Cottage, Hope.

May 22, 1855. 6—3t.

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture of Upper Canada, No. 1, Vol 1st, pp 160. Toronto: printed and published by Thompson & Co., for the Board of Agriculture

This work will be issued in quarterly parts, four of which will form a volume. The first part embodies the transactions of this Provincial Association from its institution in 1846, down to the commencement of the year 1851 The next number will contain an account of the further proceedings of the Association and the Board of Agriculture, Prize Essays, Abstract of County Reports, &c

The work will be sent free by post for 5s per annum. All communications and remittances to be addressed to the Secretary of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855. 5.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at obourg in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND. *Secretary.*

Office of the Board of Agriculture
Toronto, March, 1855.

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision

A man and three boys can turn out from 5, 0 to 1", 00 feet of pipes per day, according to sizes; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London anada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,
Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturists and Horticulturists, that they have received large and varied assortment of

FARM & GARDEN IMPLEMENTS

And would solicit a call from parties about to purchase, at No. 77, corner of Yonge and Adelaide streets, Toronto They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand Reaping and Mowing Machines on the most improved principles, will be for sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second, Bred by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds; if grade, 50s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (I 621 English Herd Book), was sold in 18.3 for $4,00..

FREDERICK WM. STONE.

Guelph, April 24, 185 .

COMBINED REAPER AND MOWER.

Manny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught—the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $13 . We are also manufacturing Burall's Reaper, price $120; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, Mav 6, 1855.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper anada, and devoted to the improvement of *Agriculture Horticulture Farm Mechanics*, and to the advancement of the *Farmers' interists ge erally* It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of attle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

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Agriculture, &c.

INSECTS, WIREWORM, &c.

It is in the larva state that the ravages of insects are most felt, and this requires a word or two of explanation.

BUTTERFLIES, MOTHS, and many other insects, undergo a succession of changes, or transformations, prior to their assuming their last and frequently gorgeous form under which we see them fluttering from flower to flower. Of course I speak now more particularly of the butterfly. The moths are usually, though, no doubt, many of them are extremely beautiful much more sober in their movements, and less gaudy in their plumage. They are, also, principally of nocturnal habits, and consequently come less frequently, and less strikingly, under our notice.

The female moth or butterfly deposits an egg, which, gradually ripening to maturity, becomes, a maggot, grub, or caterpillar. This is called the larvæ and it is, in this stage that the insects prove most noxious to the farmer's crops. These larvæ are excessively voracious, and their ravages terminate only with their next transformation into the state of *pupa* or *chrysalis* Prior to assuming this state, the caterpillar forsakes its food, and seeks some retired and safe retreat, usually burying itself for this purpose underground. The head then gradually bends forward, and the face is embraced by the upper or thoracic feet; the body likewise becomes contracted in its dimensions, more particularly in its length, and also gradually becomes covered with a firm and shell like coat or case. This is a thickening and induration of the skin of the grub, not of the *epidermis* or *cuticle*; for that is gradually cast as a slough, in proportion as the work of transformation proceeds The chrysalis is soon formed; some insects envelop themselves in a web, as the silkworm, &c.; others do not. During this stage, the insect is, of course, perfectly harmless. In course of time, the perfect insect is formed within its shelly sheath; it now commences the work of breaking open its prison, having effected which, it emerges in all the beauty of insect perfection.

CATERPILLARS do not prey indiscriminately on all sorts of herbage or farming produce. Each species has its favorite plant, or plants; and not even starvation will induce it to transgress these limits that instinct has assigned to its appetite, or eat of a plant of another sort.

One of the most destructive grubs which infests the fields of the agriculturist, or renders futile the care and skill of the gardeners, is, perhaps, that well known larvæ—the WIREWORM. I may here observe that the general name of wireworm is given to the larvæ of many species of beetle, all, however, very similar in habits and appearance, and so equally gifted as to their destructive powers, that it would be difficult, indeed, to draw any distinction in this respect between them.

Scarcely any land is free from the ravages of some one or other of the wireworms; and there is scarcely any description of crop upon which they will not prey with equal greediness Wherever grass or any sort of herbage will grow, there will the greedy wireworm be found. The beetles, of which the wireworms are the larvæ, are those called the ELATERS; also spring-beetles, skipjacks, and click or snip-beetles, from the power they possess of springing up with a click or snap-like noise when placed upon their backs. The eggs of the wireworm are very minute, and are deposited in the earth at the roots of the young plants. When first hatched they are invisible to the naked eye, but attain nearly the length of an inch when full grown, and in this state of larvæ they remain for nearly five years. No wonder, therefore, that, between their longevity and rapacity, they should be deemed by farmers so very pestilent a scourge. During the continuance of their larvæ state, these worms cast their outer skin several times, being white in color, and very tender for a short period after each sloughing; at other times they are covered with a hard and solid coat of a horny consistence, so firm and impenetrable as to render them proof against most of the ordinary remedies that might be used for their destruction.

Wireworms are somewhat more than half an inch in length, and resemble the meal worm in appearance but are more angular, less perfectly cylindrical, more flattened above and below. Their head is horny and formed for perforation, and the mouth, though small, is furnished with a most effective pair of very powerful jaws There are six feet on the upper portion of the thorax, and one at the extremity or tail. The former are called pectoral or thoracic, the latter, anal.

When full-grown, the wireworm buries itself in the ground, where it forms a cell, in which it becomes a chrysalis or pupa; this change takes place early in autumn, and in two or three weeks at farthest it becomes a beetle. The beetles are harmless, feeding only on flowers; they can fly well, and when on the ground can run very fast, with their heads down, and drop when approached. The mouth is not true same in appearance with that which existed in the worm, but will, on examination, be found to be formed of the same organs only perfected.

There are two species of beetle that produce the wireworm, more common in grain fields than the rest, and therefore the more to be dreaded. These are: the elater appressifrons, and the elater obscus.

The bug parent is familiarly known as the snapping bug. As before said, the worm continues five years before his transmutation to the perfect insect state, during which time it feeds on the roots of wheat, barley, oats, corn and grass. Its ravages are sometimes extensive and desolating.

The wireworms usually eat into the stalks just about the roots, and sometimes separate it from the root altogether; they seldom, however, remain so long engaged upon the one spot or portion of stalk When they attack potatoes, they penetrate into their very hearts, and thus frequently have wholly destroyed the seed potatoes when newly planted; to obviate which it has been recommended to plant whole potatoes

Amongst the green crops, turnips may be regarded as the greatest sufferers, and the tender young plants are, of course, most victimized in autumn Multitudes of these ravenous grubs may then be found gnawing at the roots of the young turnips, and even biting off their extremities. They also frequently attack the stalk, bite it across, and when the stems fall, attack the leaves. This is, however one of the least formidable of the robberies of this persevering pest, and if the wireworms were satisfied with the leaves alone, they would not be so injurious.

We should possess some acquaintance with the natural history of such animals as we desire to destroy. Such knowledge facilitates our operations, by informing us of their haunts and habits, of their dispositions and predilections, and consequently, not only of where we are to seek for the pests, but of how we can best set to work to accomplish their destruction. Recollect, I may remark, in passing that the beetles, whence the wireworms are produced, are, although not necessarily mischievous themselves to be regarded as the grand source of your annoyances Let it be your care, therefore, to have these caught and destroyed; they will be chiefly, found, during spring and summer, upon nettles, hemlocks, fool's parsley, and other such herbs. Let this be one of your cares.

The eggs are chiefly deposited in pastures where the surface has been undisturbed, and in clover layers and fallows. Where, therefore, they make their appearance, you will find it a good plan to have your pastures eaten close by the sheep Rolling, in early spring, is also recommended, and is, in my opinion, very likely to prove serviceable, having been preceded by a top-dressing of lime. I recommend a top dressing of lime, salt, and soot. The proportions recommended are as follow:—Lime, 2 parts; soot, 3 parts; salt, 1 part. The salt may be purchased from salt works, or extensive dealers in this article, as spoiled salt—there being accidents which will render it unfit for market as salt, without at all militating against its value as manure, or a top-dressing. The lime should be quicklime pounded, and the mixture should be applied to the land as speedily as possible after having been compounded: be it also remembered that this composition will be found a valuable fertilizer, as well as a foe to insects of all sorts. Woad, sweet gale, the refuse of gasworks, sprits of tar, chloride of lime, nitrate of soda, mixed with the manure, will be found very serviceable; at all events, effecting a sensible diminution in the numbers of the wireworm, and of course a diminution in their ravages in an equal ratio.

The wire worm is found in great numbers, generally on newly cultivated grounds, or meadows, which have been long in repose; they can be conquered, and should not be suffered to revel on the plants of industrious farmers. Exposures to the frosts of winter will destroy them; therefore, autumn plowing is essential; and the course or remedy suggested to destroy the cutworm, is equally effective on the wireworm.

It has been tried to destroy the wireworm by flooding, but this is only a useless attempt, it being almost impossible to drown this creature, which will be found as lively as ever after a total immersion for three, or even four, days; still, however, such flooding though it will not destroy the worms, interferes with the laying of the beetles which produce them, and will consequently, in this point of view, be occasionally found useful.

Soda has been used with success. I have known soda tried by practical men, who were most unwilling, unless actually coerced into it, to listen to any novelty, and they have unanimously asserted the success of their experiments with soda.

Let frogs and toads be encouraged on your lands; their entire food consists of insects; of such creatures as you are most anxious to destroy. Call them in, therefore, to your assistance—protect them, regard them as your friends and laborers, and they will aid you most extensively. The robin, blackbird, wagtail, thrush, together with poultry, and crows, &c., feed on these insects.—*Harris on Insects.*

Remedy for Bots in Horses.—For many years past I have used a simple remedy for bots, and I am almost disposed to call it "an infallible remedy," sure enough. But I can say, with truth, that I have never known it fail if administered at the commencement of the attack. Drench freely with sweet milk and molasses, (sugar or honey will do) well shaken together. Continue it, a bottle full every fifteen or twenty minutes, according to the severity of the attack, until the animal becomes easy; then give a quart bottle full of strong salt and water, followed soon after with a quart bottle of Castor oil. It is worse than idle to give anything with the view of killing the bots in a horse. The only plan is to convey them off; a sweet drench is the thing; they seize upon it with avidity, and in a little while will fill themselves, increasing at least one-third in size. In salt and water they will lie perfectly dormant for days together, hence the advantage in its preceding the oil. Whenever the bots attack a horse they will always be found at the neck of the throat, where a sweet drench is thrown immediately amongst them the moment it is swallowed by the horse. It is a great mistake to suppose that they are hid in some secret recess where medicine cannot reach them, and quite as great a one to suppose that a sweet drench will not divert their attention from the horse.—*Southern Cultivator*

Preservation of Cheeses.—Accidents to which they are Subject.

(Translated from the Maison Rustique, Paris.)

The preservation of cheeses is a most important point to those engaged in their manufacture, especially when they are intended for export—Their consistence and their state of fermentation more or less advanced in the store-houses or cheese rooms, should serve as a guide. The method of manufacture also affects largely their preservation. Those cheeses which have received pressure in a too fresh state, and from which the whey is not entirely separated, are liable to raise and have their centres, holes or reservoirs of air, which give to the paste a spongy and disagreeable look. When this accident arises during the manufacture, and if the fermentation is considerable, they place the cheese in a cool and dry place, and pierce it with skewers of iron in the places where it rises the most; the air or the gas escape by these openings, the cheese subsides, and the interior presents fewer cavities. To prevent this accident, the English make use of a powder, which is sold under the name of cheese-powder; it is composed of a pound of nitre and one ounce powdered Armenian bole, intimately mixed. Before salting the cheese, and while it is about being placed in the press, they rub it with an ounce of this mixture; a stronger dose would produce a bad effect.

The part that the salt plays is very important We have seen, indeed, that the casein in the dry state exists in an indefinite condition; but it then possesses only a weak flavor, and not agreeable. The addition of the salt on the one hand, and the preparation or perfection in the store house on the other operations which require the greatest care and vigilance—succeed in procuring a gentle fermentation, or a gradual reaction between the elementary substances of the cheese. This reaction proceeds so much the more rapidly, as the cheese is softer and as the place is warmer and more moist. In proportion as the fermentation has been gentle, so much the more is the flavor of the cheese sweet and agreeable. It is at this precise moment when the reaction between the elements has produced combinations agreeable to the taste, that it is necessary to perfect the cheese—sooner than this it is not finished; later it is in a state of decomposition more or less advanced. When the cheese is in the right condition, it is put in a cool place and not too moist, in a good cellar which does not contain any liquor in fermentation; those where wine will keep well, are equally good for cheese but the two together in the same cellar will mutually exercise a bad influence.

Some cheeses with soft and fine paste, as those of Epoisse, of Langres, of Brie, and of Gerome, are put in boxes tightly, and giving them a coat or two of paint, the cheeses will be preserved for a longer time and in a better condition CHAPTAL and others claim that cheese after transportation is never so good as when it is just taken from the cellars. The fact is, it decomposes during its transportation, and it is for this reason that in a tight varnished box the cheese will retain those qualities which constitute its excellence.

The cheese of Holland are usually covered with a coating of linseed oil varnish: this preparation is doubtless one of the principal causes of their preservation on long voyages; their small bulk may also be adduced as a reason In making the Gruyere cheeses of a small size, and in covering them with this same varnish, they will be entirely impervious, even if thrown into the sea. The varnish forms an united, coat solid and dry, which prevents the access of air and moisture, the most active agents of fermentation. As to the action of heat, one can secure himself against that by a coating of powdered charcoal.

The insects which attack cheeses are, 1st the flesh-worm or cheese mite, (*Acarus siro*) which devour them when partly dried. These animals are so much the more dangerous, because they hatch beneath the crust, whence they spread throughout the interior, causing great injury. When one is careful to brush the cheese frequently, to wipe them with a cloth to wash with boiling water the shelves on which they lie, one can protect himself against these mites. But the most certain way is, after having rubbed the cheeses with a brine, to let them dry, and smear them over with sweet oil. It is in this way that they treat Gruyere cheese when it is attacked by this destructive insect.

2d The larvæ of the gilded green fly, (*Musca cesar.*) of the common fly [*Musca domestica,*] and above all of the fly of putrefaction, (*Musca putris*). These larvæ introduce themselves into the cheese and make great ravages. The presence of these vermicular insects which denote an advanced state of putrefaction excite much repugnance with the great number of consumers; some persons, on the contrary, prefer the cheese in this state, because it is then stronger and of a more pungent flavor.

They destroy all these animals by vinegar, the vapor of burning sulphur, or by washes of chloride of lime. When the store-house contains these insects in abundance, they take up the chees and scrape and wash the shelves with water holding in solution chloride of lime; they scrub at the same time the floor, and apply to the walls a coating of whitewash When the cheese room is dry, they replace the cheeses, which have been previously washed with a weak solution of chloride of lime, dried, wiped with a cloth, or scraped, if they need it, and finally rubbed, as has been said, with a cloth soaked in oil.

If the cheeses have arrived at an advanced state of decomposition, they are put in powdered charcoal, mixed with a small quantity of chloride of soda, which destroys their offensive odor, and haste must be made to finish their manufacture before they become entirely putrid. As to mould, this can be prevented by scraping the cheese, by brushing it, and by rubbing it with the oil.

To give the new Gloucester cheese the taste and appearance of old cheese, with a probe they take from the two sides and centre—penetrating as far as the middle in each case—cylenders of the paste, which they replace by similar ones from an old and fine cheese. After keeping the cheeses thus prepared for a few days, they will have acquired all the agreeable qualities of old Gloucester.

CLAY FOR SANDY SOILS.—Clay as a constituent of soil is not sufficiently appreciated. Its affinity for moisture, when thoroughly pulverized, is very great. It also absorbs ammonia to a greater extent than ordinary soils, and should therefore, form a part of every garden soil, sufficiently mixed with sand to be easily pulverized A few loads of sand applied to a strong clay soil, or a few loads of clay applied to a sandy soil, makes the best of manure. Sufficient attention is not paid to the right composition of soil. Nature will take offence if we undertake to correct her mistakes, and we can well afford to do it, especially in our gardens, or where we bestow a good deal as on root crops.

THE CHEST OF THE HORSE.

The following remarks from a paper lately read before the Highland Agricultural Society of Scotland, by Professor Barlow, of the Edinburgh Veterinary College, are well worthy the attention of every one who has anything to do with horses:

The chest, as every one knows, is the great cavity containing and protecting those essential organs of circulation and respiration—the heart and lungs. It is also much more concerned in insuring speed, good action, and endurance, than is sometimes remembered. In illustration of this last statement, let me remind you that a spacious and well-formed, in other words, a *good chest*, is always associated with a strongly developed muscular system; again, a small and badly-formed chest always involves deficiency of muscle, and often deficiency of bone also. This is true in men, horses, oxen and dogs alike. In a man whose breast is narrow, the shoulders droop forward, and are rounded instead of square; he is often round in the back also; he has slender arms, thighs, and legs, and a weak body; he may be tall enough, and too tall, but is certain to want breadth, muscular power, and strenth of bone in proportion. So a horse with flat short ribs, and of course a contracted chest, has the fore-legs standing near together, is slender in limb, and defective in those masses of muscle which are required to combine great strength with easy rapid, and lasting powers of locomotion. On the other hand a good chested horse is the one for active endurance, and good-chested cattle are most to be prized for milking, feeding, or labor; a man, too having his shoulders well apart, and showing a good front, is best adapted for great physical exertion, and possesses best health; truly athletic men, as every one knows, are not narrow-breasted, but broad-chested.

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Now it is a well-known fact, because attested by daily experience, that when a man or animal becomes distressed for breath, he is unable to undergo any prolonged exertion. On the other hand, when bodily labor is performed by means of comparatively easy and slow breathing, such labor can be continued far longer and far more efficiently than when respiration is highly excited or oppressed. We can, indeed, predict a horse's capacity for enduring throughout a long and laborious day, by watching his breathing under the first half-hour's exertion. If he should blow, purge, perspire much, and become flat in the sides, he is not trustworthy; but if he should keep round in the flanks and breathe freely, without perspiring unduly, he is worthy of dependence, so far as endurance is concerned. Some horses can go at a satisfactory speed without betraying unusual distress during a long day's work in the fields or in harness, and appear as lively at night as they were in the morning. They feed well on coming to the stable, and will be little the worse to morrow for what they have done to day. Other horses go freely for an hour or two, but lose energy, and accomplish their work under symptoms of increasing fatigue. They refuse to feed on coming home, and for days after this are unfit for any active exertion. It is too easy to work some horses beyond their appetite; other horses again perform any amount of labor, yet feed heartily, and seldom appear tired.

Let us endeavor to explain what the chest and its contents have to do with this ability for endurance in one case, and inability for endurance in the other. Active exertion induces a great amount of wear and tear in the system, for every motion necessitates more or less destruction of muscular tissue. If the muscles then, are not continually supplied with adequate nutrition, or if the r exhausted and worn-out products are not restored by new substances, they become incapable of action. Their supply of actual nutrition comes through arterial blood from the food; blood enriched by good food, must therefore be supplied in proportion to the demand established by exertion. Venous blood however, is continually taking away exhausted tissue, and carries it to the lungs, whence it is expired; if the lungs, chest, and heart are capable and efficient in action, the supply of good blood is sufficient to maintain the physical powers in full integrity. Large lungs, a powerful heart and a good chest make and circulate abundance of good blood; or rather, good food makes rich blood, good respiratory powers keep the blood pure, and a strong heart keeps the stream in motion. In a horse where such a state of things exists, there is a power of digestion which work can rarely impair, and a muscular developement which exertion can only improve If, again, the lungs and chest are small in size and ineffective in action, the blood becomes highly charged with noxious matter; this, like a poison, destroys the appetite, and muscular power will certainly fail when muscular nutrition is not maintained.

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The capacity of a horse's chest depends of course upon its *breadth depth and length*. *Breadth* of chest is due to the amount of divergence, or arching outward and backward, of the ribs from the spine. *Depth* of chest is determined by the length or prolongation of the ribs in a direction downwards. The anterior (fore) limbs are required to aid in supporting the body in a horizontal position, and also serve as important organs of progression; they become, in fact, reduced to pillars of support and levers of propulsion only. Hence, so far as their osseous framework is concerned, we find them resolved into comparatively simple columns of bone, comprised chiefly of long pieces piled one upon another, and tipped or protected below by a tough, thick, horny box or hoof. Their motions are chiefly those of bending in two directions, forward and backward; the shoulder does certainly possess considerable rotary movement, but the joints below it act like ordinary door-hinges. Now to bring these limbs sufficiently beneath or within the weight they have to sustain, each side of the chest is much flattened before. This flattened surface is most complete over the four or five ribs first in order, and is covered by muscle, tendon, and elastic tissue, which join the shoulder-bones to the chest. * * * The flattening of which we have spoken is greatest, as a general rule, in animals which are specially fitted for rapid action. It is more obvious in the greyhound than in the bulldog or mastiff; is more evident in the wild boar than in the prize swine of our cattle-shows; and as everyone knows, it is far more determined in the racer than in the dray-horse. A very broad chest between the shoulders and elbows is incompatible with great powers of speed. Horses, for instance, such as those gigantic creatures seen in London drays, make a poor business of a trot, and mere burlesque of galloping; no more can a bulldog walk or trot like a greyhound.

In trotting, one fore foot is on the ground at once; whilst each foot descends and becomes placed, it approaches the middle vertical longitudinal place of the body; it is brought, in fact, below the centre of gravity, in order to balance the weight above; and the corresponding shoulder is thrown outward. This bringing of the feet inward, so as to place them

more directly underneath the superincumbent weight with the accompanying outward or balancing shoulder motion, occupies a portion of time, and occasions a rolling or swinging gate, which is more perceptible in the fore than in the hind limbs. The same rolling action is also seen in walking. A wide chested horse trots much like a bulldog, and for the same reason, viz., a new centre of gravity has to be found for every step, a new balance for every stride, and side motion attends the motion in a forward direction. In galloping, the two fore feet are together on the ground at one moment, and the two hind feet at another; in this action do not require to be brought so much inward, because, being placed one on each side, they restrain the weight without. Owing, however, to the distance at which they stand apart, the action is wide, loose, and jarring. We assume, then, from what we have seen in animals adapted for most rapid action, that this flattening inside the shoulder-blades, and corresponding approximation of the fore legs, are necessary conditions of form. It is, however, quite apparent that such flattening will greatly reduce the chest in size, and thus lessen the lungs within. A remedy, however, is ready for such a seeming evil. It is this: the chest of a well-formed horse is increased in depth, in order to compensate for apparent want of width. When the chest is thus narrowed from side to side before, the fore-legs approach in like proportion. If near enough, and not too near, they perform straight or direct motion only After being raised from the ground, as in walking or trotting, and during their descent in the act of stepping they need not describe any rotation inward in order to be brought underneath the centre of gravity, for they are already sufficiently below the superincumbent weight, nor do the shoulders and chest require to be thrown outward; the step is consequently smooth, the body is never off its balance, and all rolling action is thus avoided. In the gallop, too, where the chest is narrow, there is neither loss of time, nor useless expenditure of muscular power connected with width and looseness of action, but the limbs play evenly in parallel planes or lines of direct onward motion, and, so far as speed is concerned great advantage is gained.

A too-narrow chest, however, is about the greatest of evils; it is sometimes so unduly contracted, and involves other defects so slightly counterbalanced by any advantages, as to render many horses of light and even of heavy breeds completely worthless. How many horses accounted well-bred, [i. e. partaking largely of the blood of the race-horse,] after proving useless for other purposes, find their way, while yet young, into our street coaches! We see the poor creatures, with broken, tottering knees, bruised inside the shank and fetlock, occupying all city cab stands, and hanging their heads to the ground as if broken-hearted. When a very narrow chest is also very shallow in depth from above to below, the fore-legs come too closely in contact, or, as a popular expression is, "they seem to grow out of one hole." There is also another serious defect in a narrow chested horse; owing to the ribs not descending sufficiently between the elbows, and a deficiency of muscle over the breast-bone, the elbows turn inward, and sometimes stand under the breast. This causes the toe to turn outward; every time a fore-limb is lifted from the ground, the foot and flank bend inward, but the knee outward; and as the foot approaches the ground again, it is apt to strike the opposite fetlock. By standing some distance before a horse with this kind of action, so as to watch his gait when walked or trotted towards us, the fore-legs and feet seems actually plaited or folded over one another at every step. In a rapid trot this involved action becomes confused, the animal is apt to strike the foot of one leg against the foot, fetlock, or shank of the leg opposite and may come down at any moment. More or less turning out of the toes is often seen in race horses, especially among second class animals; when the turning out is not very marked, and the fore-legs are not too close, it is usually accounted no great defect, when speed is the only object, and where little weight is to be carried. On the other hand, where the fore-legs are almost close together, and the toes are widely everted, we may be sure the chest is narrow and shallow to an injurious degree. In making these observations I may remind you that many cases of everted toes and interfering limbs depend upon malformation of the fore-legs, and not upon defective formation of the chest.

GEOLOGICAL FEATURES AND SOIL OF CANADA.

(From Hogan's Prize Essay.)

The general features of Canada exhibit a granitic country, with occasional calcareous rocks, of a soft texture, and in horizontal strata. The calcareous region extends in a line north-west beyond Lake Michigan, as far as the sources of the Mississippi, and thence to the great range of the Rocky Mountains.

All the great lakes are placed in the line of contact between two vast chains of granite and limestone. At the narrowest part of Lake Winnipeg, where it is not more than two miles broad, the western shore is skirted by calcareous rocks, while on the opposite shore there are still higher rocks, of a dull grey granite. In the Lower Province, particularly, the granite prevails, with clay and limestone occasionally. The north shore of the St. Lawrence offers a rich field for the mineralogist, and at the Falls of Montmorenci there is a dense bed of limestone, exhibiting deep fissures, which appear to confirm the account of the earthquake in 1663, of which so many traces are visible.

The granite is invariably found in strata more or less inclined to the horizon, but never parallel with it. From Quebec to Niagara the red slate is perhaps the prevailing rock. The subsoil around Lake Ontario is limestone on granite, real granite being seldom seen. On Lake Erie the strata are limestone, slate and sandstone; and at Niagara the stratum of slate is nearly forty feet thick, and almost as fragile as shale,—so much so, indeed, as to sink the superincumbent limestone, and thus verifying, to some extent, the opinion that a retrocession of the falls has been going on for ages. On Lake Huron limestone is found with detached blocks of granite and other primitive rocks. On the south shore of Lake Superior are sandstone, resting on granite, chalcedony, cornelion, jasper, opal, agate cardonyx, zeolith, and serpentine, with iron, lead, and copper imbedded. The north shore is of older formation, with vast beds of granite, and mines of copper.

An elaborate and highly interesting report recently presented by Mr. Logan, the Provincial Geologist, to his Excellency the Governor General, furnishes much valuable descriptive detail of the country between Montreal and Cap Tourmente, thirty miles below Quebec, having a length of about two hundred miles, gradually widening from Cap Tourmente, and having an area of about 3000 square miles.

"It presents a general flat surface, rising in many places by abrupt steps, (the marks of ancient

"sea margins,) into successive terraces, some of which "are from 200 to 300 feet above the level of the ri "ver, and the whole have a general parallellism "with it. These terraces are occupied by extensive "beds of clay and sand." The economic materials of this district, traversed by the St. Maurice and other large rivers, appear to be those of *bog iron ore*, of which the largest fields appear in the country between St. Maurice and Batiscan; and in the same localities, especially in the St. Nicholas range of Pointe du Lac, *iron ochre* is extensively found, occupying, it is said, an area of about 400 acres, with a depth ranging from four to six feet, and affording eight varieties in colour. *Iron sand*, *wad*, and *bog manganese* are also found, and *clay* for pottery, bricks, and roofing tiles, to an extent which enables them to be manufactured in almost any locality where wanted; and the *white sandstone*, although harder than most building stone, possesses, as Mr. Logan remarks, the valuable property of resisting fire. This, with limestone and the yellow calcareous stone, called the "Deschambault's one," and the *millstones* over the Potsdam beds, fit for flagging, are in beds from one to two feet thick. *Marble* of various colours, and susceptible of the highest polish, is found, and *peat* has been turned by the *habitants* to excellent account; when burned and combined with the surface beneath, it becomes a very fruitful soil.

The conflagrations which have destroyed so large a portion of the two principal cities in Canada have naturally called public attention to the roofing of the houses, and several slate quarries in the Townships of Kingsey and Elzear are now in operation. Their specific gravity and chemical composition are said to resemble the finest Welsh slate. In the Eastern Townships of Lower Canada clay states have been extensively discovered.

Sir Charles Lyell and Mr. Logan have declared—and it is feared with too much truth—that from the geological structure of Canada coal cannot exist.

If Canada, however, has not coal she is conveniently situated to it: on the north-west are the immense coal fields of the Michigan Territory, and on the south-east is the still greater coal field of Appalachia, the one with a supposed surface of 12 000, and the other of 60,000 square miles, and said to be the largest known carboniferous tracts in the world.

But little copper has been found in Lower Canada. On the River L'Assomption and other places where it has been discovered the lode is said to be of trifling value.

Mr Logan has devoted much attention to the discovery and distribution of gold. The auriferous tract is clearly shown to exist over 10,000 square miles on the south side of the St Lawrence, especially in the Eastern Townships, in the valley of the St. Francis, from Richmond to Salmon River, and on the Magog River above Sherbrooke; but he remarks "that the deposit will not, in general, remunerate unskilled labour, and that agriculturists, "artisans, and others engaged in the ordinary occupations of the country, would only lose their labour by turning gold hunters."

The report of Mr. Logan on the Upper Province is accompanied by one by Mr. Murray, the Assistant Geologist, who especially refers to the district between Kingston and the River Severn, connecting Lake Simcoe with the Georgian Bay. The economic material met with in this district are *magnetic and specular iron ore*, which exists chiefly in the Township of Bedford in the County of Frontenac, Madoc and Marmora in Hastings, Belmont in Victoria, and Seymour in Northumberland; and of these Mr Murray thinks the deposits in Madoc, Marmora and Belmont will become of great commercial importance. The Marmora mines are now worked by an English Company with large capital, and every modern improvement in machinery. They are situated on a rocky flat, and the iron ore is said to be rich in the extreme, yielding sometimes ninety per cent. It is found chiefly on the surface or in its immediate vicinity The Company owning them also possess extensive beds of marble and lithographic stone. In the same district are found galena and plumbago; and the Potsdam formation yields grindstones and flagging stones; clay producing the red and white brick is also abundant.

The copper on Lakes Superior and Huron is becoming an important article of national wealth, and is found occasionally in masses of 2000 pounds weight in a pure and malleable state.

Canada abounds in mineral springs, and the Caxton Plantagenet, St Leon and St. Catherines waters have acquired great celebrity

The soil of Canada is generally extremely fertile, and consists principally of yellow loam on a substratum of limestone It greatly improves to the westward, and its quality, when uncultivated, is easily ascertained by the timber it produces, the larger and heavier kinds growing on the best soil. In Upper Canada the brown clay and loam intermingled with marl, predominates in the district between the St Lawrence, and the Ottawa; but further west, and north of Lakes Ontario and Erie, the soil becomes more clayey and far more productive The virgin soil is rich beyond measure, and the deposit of vegetable matter for ages improved by the ashes of the fires which sometimes sweep the forest, render it abundantly productive for several years without extraneous help.

WHEAT.

The following is from J. Payne Lowe's forthcoming book on Wheat.—[ED.

METEOROLOGICAL INFLUENCES.—It is a well established fact that in England wheat cannot be cultivated at a height of 1000 feet above the sea, while in the South of France it may be grown at an elevation of 1500 feet. This, of course, is due to difference of temperature.

It is also well understood that the hygrometric condition of the atmosphere influences the composition of wheat; for in moist climates, such as that of Ireland, it will contain a larger percentage of water.

Now, for the reason that a great amount of fertilizing material is received from the atmosphere during a rainy season, the necessity of proper mechanical and chemical condition of the soil, becomes still more apparent, for thus the effects of the rain will materially be governed If proper under-drains exist in soils that need them, all excess of moisture will pass away, thus permitting the free circulation of air to exercise its beneficial efforts both in increasing the fertility of the soil, and enabling the wheat plant to withstand the various diseases to which it is liable.

As already stated, the per centage of gluten is invariably greater in warm climates.

MARKHAM'S FAREWELL TO HUSBANDRY.

We give below two or three extracts from an old book called *Markham's Farewell to Husbandry.* The part of the work from which we quote treats of the orchard and garden, and is printed in the old English black letter. The first extract we make is of the "distance of trees," and the second, from the *poetry* of the work, in relation to the honey bee.

DISTANCE OF TREES.

I know not to what end you should provide good ground, well fenced, and plant good sets; and when your trees should come to profit, have all your labours lost, for want of due regard to the distance of placing your trees. I have seene many trees stand so thicke, that one could not thrive for the throng of his neighbours. If you doe marke it, you shall see the tops of trees rubd off, their sides galled like a galled horse's backe, and many trees have more stump than boughs, and most trees no well thriving, but short, stumpish, and evil thriving boughs: like a corne field over-feeded, or a towne over-peopled, or a pasture over-laid, which the gardiner must either let grow, or leave the tree very few boughs to beare fruit. Hence small thrift, galls, wounds, diseases, and short life to the trees: and while they live greene, little, hard, worme-eaten, and evil thriving fruit arise, to the discomfort of the owners.

To prevent which discommoditie, one of the best remedies is, the sufficient and fit distance of trees. Therefore at the set ing of your plants you must have such a respea, that the distance of them be such that every tree be not annoiance, but an helpe to his fellowes: for trees (as all other things of the same kinde) should shrowd, and not hurt one another. And assure your selfe that every touch of trees (as well under as above the earthe) is hurtful. Therefore this must be a general rule in this art: That no tree in an Orchard well ordered, nor bough, nor Cyon, drop upon, or touch his fellowes. Let no man thinke this impossible, but looke into eleventh chapter of dressing of trees. If they touch, the winds will cause a forcible rub. Young twigs are tender, if boughs or armes touch and rub, if they are strong, they make great galls. No kinde of touch therefore in trees can be good.

COMMONWEALTH OF BEES.

When I had view'd this Common-wealth of Bees,
Obseru'd their Lines, their Art, and their Degrees:
As; how, beside their painefull Vulgar ones,
They haue their Prince, their Captaines, and their Drones:
How they Agree; how temp'ratly they Feed;
How curiously they Build; how chastly Breed;
How seriously their Bus'nesse they intend;
How stoutly they their Common-good defend;
How timely their Prouision are prouided;
How orderly their Labors are diuided;
What Vertues patterns, and what grounds of Art,
What Pleasures, and what Profits they impart:
When these, with all those other things I minde
Which in this Booke, concerning Bees, I finde:
Me thinkes, there is not halfe that worth in Mee,
Which I haue apprehended in a Bee,
And that the Pismere, and these Honey-flies,
Instruct vs better to Philosophize,
Than all those tedious Volumes, which, as yet,
Are leaft vnto vs by meere Humane-wit.
For, whereas those but only Rules doe giue:
These by Examples teach vs how to liue.

FARMING.

If one half the zeal, energy and expense that blots so many gazettes with low and coarse abuse, setting the whole community by the ears for the vain and paltry purpose of a few demagogues and officeseekers, were bestowed on the advancement of agriculture; if the people were half as ambitious to improve and beautify their fields, as they are to settle the affairs of the nation; and half as angry with thistles, thorns and poor fences, as they are with their political opponents, who probably wish as well to the country as they, we should have more productive fields, less complaints of poverty, more ability to be charitable and munificent, and abundantly more good feelings. From Pittsburg to New Orleans the son plows as his father did before him, and the great mass of farmers are as stationary in theory as they are in practice. Nine in ten believe at this moment, that book farming is the mere useless, visionary dreaming of men that know nothing about practical agriculture.

We would tell them that England is the garden of Europe simply because almost every acre of the ground is cultivated scientifically and on principles which have been brought to the test of the most rigid and exact experiment. We would tell them that New England, of whose soil and climate they are accustomed to think as consigned, by Providence, to sterility and inclemency, is the garden of the United States, only because the industrious and calculating people do not throw away their efforts in the exertion of mere brute strength—but bring, mind, brain, system and experience to bear upon their naturally hard and thankless soil.

On every side the passing traveller sees verdure, grass and orchards in the small and frequent enclosures of imperishable rock, and remarks fertility won from the opposition of the elements and nature. After an absence of ten years, on our return to our country, we were struck with this proud and noble triumph conspicuous over the whole region.

The real benefactors of mankind, as St, Pierre so beautifully said, are those who cause two blades of wheat to mature where one did before. The fields ought to be the morning and evening theme of Americans that love their country. To fertilize and improve his farm, ought to be the main object of the owner of the substantial soil. All national aggrandizement, power and wealth may be traced to agriculture, as its ultimate source. Commerce and manufactures are only subordinate results of this main spring.

We consider agriculture as very subsidiary not only to abundance, industry, comfort and health, but to good morals and ultimately even to religion. We shall always say and sing, "Speed the plow."—*Rev. T. Flint.*

BEAUTY—HOW OBTAINED AND HOW PRESERVED—The true foundation of beauty in woman is exercise in the fresh air. No cosmetic is equal to this. English ladies of rank are celebrated all over the world, for their splendid persons and their brilliant complexions; and they are proverbial for their attention to walking and riding. The sallow cheeks, stooping figures, susceptibility to cold, and almost constant ill-health, which prevail among the American wives generally, are to be attributed almost entirely to their sedentary life. A woman can no more become beautiful, or remain so without healthful exercise in the open air, than a plant can thrive without light.

WHEAT CROP, AND THE PRICE OF IT.

A common way in speculating in flour is this: one merchant agrees to sell to another, say, five thousand barrels of flour, sixty days from date, at seven dollars per barrel; and when the day comes for delivery he never hands over a single barrel, but pays or receives the difference between seven dollars per barrel, and the actual price of the flour at the day. If flour, for instance, has fallen one dollar, he pays over five thousand dollars; if it has risen he receives it from the other party to the contract. In reality, it is not a sale, but a bet; and as soon as it is closed, each party, like jobbers in stocks, turns out to bend the market to his views, so as to win the stakes

The same thing may just as easily take place in wheat, only still more adversely to the interest of the producer; and when there is a disposition to speculate in grain we see the result in the conflicting accounts of the presses which each party has secured, as to the actual production of wheat, and in the fluctation of the market. Such reports and such fluctations are but part of the game played. We mean to cast no imputation on the press, or to insinuate that their opinions are paid for. They may, and no doubt, in most cases, do, very honestly entertain the opinions they have derived from those parties to whom they look for information—the dealers in grain—and which opinions it is their duty to give We only mean to let the farmers know, that, even with the best intentions, newspapers cannot always get access to disinterested authorities, but must give the views of others, and of buyers, in most cases

We, therefore, think it safer to judge by the past, by the history of food consumption for a recent period, and by the weather that we have had, than by any such statements as papers sometimes parade of the number of bushels which the world will bring into the market. The wide discrepancy in recent estimates of the New York Herald and the Cincinnati Price Current, one putting down the present crop at 168,575,000 the other at 114,500,000, a difference of 54,075,000 bushels, proves that all such estimates are mere stuff. As we said before, no man can estimate the wheat crop of Virginia, because its delivery takes place at so many different outlets. The same is true of all other States, and cannot be otherwise.

Of the crop of Virginia, as affected by weather and other disasters, we have spoken before. Every day confirms our opinion of the correctness of the views then expressed, and we have received numerous letters assuring us that we were right as far as the particular crop of each writer's section was concerned. In fact we merely took ground that a hard winter, an unexampled spring drought extending far into June, and a superabundance of insects, could not yield their disastrous effects to a few late rains and a fine ripening season. This was true of nearly all the United States, whilst the same drought embraced England and France, and must have operated to injure crops there.

Our private advices, as far as we have them, bear us out in this opinion as to the rest of the Union. A friend, for instance, whose veracity and judgment and disinterestedness we avouch, writes in a letter to another gentleman, and not intended for us, that in four thousand miles of travel over parts of the North and West with which he was familiar, he did not see one single good wheat crop. A neighbour of his, going over the same country an equal distance but by a different route, gives the same account. Both are farmers of the county of London, and by profession and from locality know what good crops are. And though the crops are much better everywhere than was expected from the early prospect, they cannot be good anywhere.

England last year made the finest crop she ever made, and has eaten it up clean. This year her harvest will be late and farmers know that here the chances are always against wheat's yielding well in a late harveet, whilst there liability to disaster in securing the grain is greatly increased. Meanwhile her consumption is increasing, her armies will need more than she can spare; and after last winter's experience in the Crimea, where they are very likely to winter again, they will supply it with grain in waste. But they can only get what they want from us. Her northern sources of supply are cut off, her others are more or less insignificant. The whole of continental Europe, now on a full military establishment and prepared for active movements at short notice, must consume more whilst it makes less, because she has a larger army and fewer producers; and France, from whatever cause, has her ports opened until the 31st of December, by decree of the Emperor—a thing never known before.

With this state of things we cannot see what is to pull down the market.

We know that at $2 50 per bushel our wheat did not bear export the past season, but was all consumed at home. But the case may be very different, if England, who generally goes into one harvest with a surplus from the other, shall commence the present with an empty belly, and find her neighbours no better off in that particular than herself.

Still, wheat has receded some fifty to seventy cents since the new crop began to come in. Why? Because there is more than enough now on hand for the present supply, which still feels the influence of an unusually high price, whereas six weeks ago there was a great scarcity, and because the time when wheat will be wanted in any quantity for shipment, at high prices, has not yet arrived and may not come for three months, or even a longer period; there is no reason, therefore, for its keeping up just this time But to force it on the market now, in a panic, would only make it still lower. A few weeks since, money, in New York, was not worth six per cent., at call, but nobody witnessed the spectacle of capitalists forcing loans on the community in consequence. On the contrary they were rather inclined to hold up. As little do we think should the farmer feel incited to send his wheat forward now merely because it has been taking a tumble of five or ten or even twenty cents in the bushel.—*Southern Virginia Planter.*

Facts for the Curious.—If a tallow candle be placed in a gun and shot at a door, it will go through without sustaining any injury; and if a musket ball be fired into water it will not only rebound, but be flattened as if fired against a solid substance. A musket ball may be fired through a pane of glass, making a hole the size of the ball, without cracking the glass; if the glass be suspended by a thread, it will make no difference, and the thread will not even vibrate. Cork, if sunk 200 feet in the ocean, will not rise on account of the pressure of the water. In the Arctic regions, when the thermometer is below zero persons can converse more than a mile distant. Dr. Jamieson asserts that he heard every word of a sermon at the distance of two miles The writer heard across water a mile wide, on a still day, with perfect distinctness, every word of a mother talking to her child.

THE PLOUGHMAN.

BY "XENETTE" OF CANADA WEST.

Tearing up the stubborn soil—
Trudging, drudging, toiling, moiling,
Hands and feet and garments soiling—
Who would grudge the ploughman's toil?
Yet there's lustre in his eye,
Borrowed from yon glowing sky,
And there's something in his glances
That bespeaks no dreamer's fancies—
For his mind has precious lore,
Gleaned from nature's sacred store.

Toiling up yon weary hill,
He has worked since early morning,
Ease and rest, and pleasure scorning,
And he's at his labor still—
Though the slanting western beam,
Quivering on the glassy stream,
And yon old elm's lengthened shadow
Flung athwart the verdant meadow,
Tell that shadowy twilight gray
Cannot now be far away.

See he stops and wipes his brow—
Marks the rapid sun's descending—
Marks his shadow far extending—
Deems it time to quit the plough.
Weary man and weary steed
Welcome food and respite need;
'Tis the hour when bird and bee
Seek repose—and why not he?
Nature loves the twilight blest,
Let the toil-worn ploughman rest?

Ye who nursed upon the breast
Of ease and pleasure enervating,
Ever new delights creating,
Which not long retain their zest—
Ere upon your taste they pall,
What avail your pleasures all?
In his hard, but pleasant labor,
He, your useful, healthful neighbor,
Finds enjoyment, real, true—
Vainly sought by such as you.

Nature's open volume lies,
Richly tinted, brightly beaming,
With its various lessons teeming,
All outspread before his eyes,
Dewy blades and opening flowers,
Emerald meadows, vernal bowers,
Sun and shade, and bird and bee,
Fount and forest hill and lea—
All things beautiful and fair,
His benignant teachers are.

Tearing up the stubborn soil—
Trudging, drudging, toiling, moiling,
Hands and feet, and garments soiling—
Who would grudge the ploughman's toil?
Yet 'tis health and wealth to him,
Strength of nerve and strength of limb,
Light and fervor in his glances,
Life and beauty in his fancies;
Learned and happy, brave and free,
Who so proud and blest as he?

TEA AT HALF PRICE.—Laysel, a French Chemist, asserts that if tea is ground like coffee, before hot water is poured upon it, it will yield nearly double the amount of its exhilirating qualities.

THE TURNIP FLY.

A correspondent of the *North British Agriculturist*, gives the following as a remedy against this troublesome insect:

Let the seed be put into a glazed pan, or any open vessel and put to it as much rapeoil as will, when stirred together with a stick, be sufficient to make the seed moist. Next add sulphur as will, when again stirred together, cause the seed to separate. When properly mixed, all the seeds will have a coat of sulphur adhering to it; and it will be found that the ingredients, in addition to keeping off the insects in question, will be a great stimulant to the growth of the crop. The seed thus managed may be sown or drilled with the same convenience as if it were clean. Should more seed be prepared than is found necessary to be sown at one time, it will keep well and not germinate for twelve months to come. This simple remedy I have never known to fail, and has only to be tried to be appreciated.

STANDARD WEIGHT OF GRAINS IN CANADA.—The following table shows the weight of a bushel of the different grains, &c., as fixed by Parliament:

Wheat,	60 pounds
Indian Corn,	56 pounds
Rye,	56 pounds
Peas,	60 pounds
Barley,	48 pounds
Oats,	34 pounds
Beans,	60 pounds
Clover Seed	60 pounds
Timothy Seed,	48 pounds
Buckwheat,	48 pounds

AN ENGLISHMAN'S APPROVAL OF THE MICHIGAN DOUBLE PLOUGH.—A correspondent of the *Mark Lane Express*, residing in Canada West, says:—We would recommend to the attention of English farmers an American plough, which we here now use to great advantage. It is wide on the sole, and has, preceding the ordinary mould board, a smaller one mortised into the beam and regulated in hold by a screw; this turns a thin paring of say two to three inches from the surface into the bottom of the furrow, and is invaluable in clover leys or dirty stubble. In spring, after it, you will see no grassy, stubbly strip marking each furrow; but all is a clean fallow-like surface, ready to work with the cultivator or grubber into a most beautiful seed-bed for peas or spring grain, giving the seed the advantage of the frost-mellowed surface soil, without danger of a foul tillage. A pair of stout horses work this plough readily, and where the land has been previously subsoiled can go to a great depth."

Manures and Fertilizers, and their application to the soil, are topics upon which the progressive farmer is generally well informed. His maxim is to so *feed the soil* that, notwithstanding the large crops produced, its strength and fertility shall annually be increased rather than diminished. Knowing it requires the same elements to produce a bushel of wheat in the middle of the nineteenth century that it did when Joseph was sold into Egypt, he takes especial pains to return to the soil the items requisite to the growth and perfection of the cereal and other crops taken therefrom. Hence he always makes compost before constructing a granary—knowing that, unless his is a rich, virgin soil, there will be little or no use for the latter without first applying the former liberally to the land cultivated.

THE HESSIAN FLY AND THE MIDGE.

[The following brief but comprehensive article (which we find in the *Rural New Yorker*), by Professor Dewey, embraces a very succinct account of these insects. As the subject is one of great interest to thousands of our readers, we give the article the prominence to which it is entitled.]

Both these insects have attracted much interest for a few weeks past, as they are voracious destroyers of wheat. Much effort has been necessary to ascertain satisfactorily the history of these depredators on one great necessary of life. It seems to be proved that they are old and well-known insects of Europe, and have the same character there and here.

The Hessian Fly was introduced into our country in 1776, by the Hessian troops who were landed on Long Island. In a few years their depredations on wheat fields were obvious, and have been well known since, till the insect has spread far and wide over the land. The Hessian Fly lays its eggs near the root of the wheat in the autumn, and the maggot, which soon is hatched, takes its residence just above the lower joint of the stalk, causing it to enlarge and yield its nutritious juice to the animal. Though the stalk grows in the spring, it is sickly, becomes weak and wrinkles down, and bears no fruit. In due time the maggot becomes a chrysalis, like a flax-seed, and changes into a fly, whose body is about one tenth of an inch long, and whose wings expand about a fourth of an inch. So small and insignificant is the animal, which is produced in such multitudes as to blast the harvest hopes of the husbandman entirely, and expose him to the desolation of a famine. Several destroyers of the maggot are provided by a kind Providence, by which the creature is destroyed, and the field of wheat is left uninjured. It is said that two crops of this insect are produced in a year.

The Hessian Fly belongs to the order *Diptera*, or two-winged, and has the very musical and expressive name of *Cecidomyia destructor*—the *destructive gall-fly*. The common name, Hessian Fly, is its accepted designation.

The *Midge*, or Wheat Gnat, is another insect, destructive to wheat. It has the name of *Cecidomyia tritici*, meaning *gall-fly of wheat*. This also is a small insect, about the size of the Hessian Fly, and often appears in great numbers on the heads of wheat. Its object there is to lay its eggs at and upon the young seed or wheat. These they soon hatch into a maggot, which devours the seed and cuts off the crop. In due time, the maggot becomes transformed into a yellow chrysalis, falls to the ground and lies until the next season, and then the shell is burst, and the midge or gall-gnat flies forth to its work of propagation. The destruction falls directly on the seed in the head of wheat, and the yellow chrysalis or pupa is to be seen at and before harvesting in the wheat heads. The maggot is not able to eat through the hard covering of the wheat seed, and cannot attack ripe wheat; and hence its destructive power operates before the milk changes into a solid form.

The Midge is often called the "Weevil," but this is an improper meaning. The weevil belongs to another family of insects, of *beetle kind*, and is able to eat ripe and hard grains. The "rice-weevil" is one of the kind, named *Calandra oryzæ*, which eats the ripened and hard rice, and also devours "stored" Indian corn. It is said that a similar weevil has been found to eat the hard seed of wheat; but too little is known of it or its ravages to be of importance now. At any rate, these are very different from the Midge now in the heads of wheat. It is desirable to use as definite names in common language as is possible. Hence the names above. To call one the wheat fly, marks no difference, for both are flies or gnats, and both destroy wheat. The Hessian Fly might be named "Wheat-stalk Fly," and the Midge "Wheat-head Fly," to designate an important fact and difference

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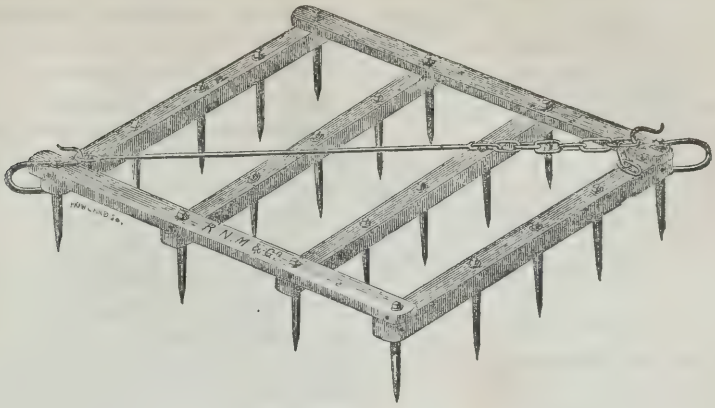
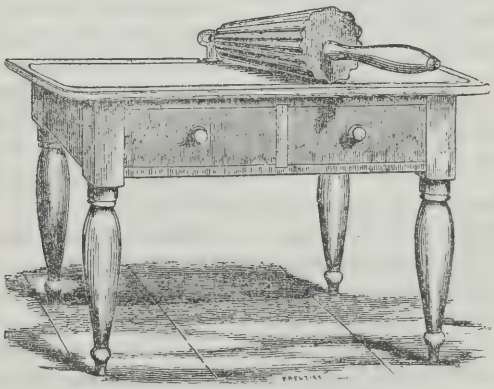
Green Food for Feeding.—On the feeding of cattle which has been so much discussed of late, Mr. Lawrence of Cirencester has an article in the *Journal of the English Agricultural Society*. He says:—When I commenced feeding bullocks, some years ago, I depended mainly on the experience of others, and was in the habit of noting down the allowances of the different kinds of food recommended in the agricultural periodicals, and otherwise by men of reputed authority in such matters. The quantity of roots usually recommended I have observed to be from 1 to 1½ cwt per diem, and for large bullocks even up to 2 cwt., and that without admixture. Now, what is the object we propose to accomplish? It may be assumed for our present purpose we are dealing with animals at maturity in point of growth that the skeleton is fully developed, and that we have only to accumulate flesh and fat. It must ever be borne in mind that it is not the quantity of food put in the stomach of the animal which accomplishes the object in view, but that which is thoroughly digested and assimilated by the healthy action of the viscera. The setting before a bullock half a cwt. of neat roots the first thing in the morning, some hours afterwards its allowance of more solid and nutritious food, and repeating the feed of roots in the evening, appeared to me an irrational proceeding; and on the other hand, that a due mixture of the solid and fluid foods would probably aid the proper digestion of each. I resolved therefore to diminish the quantity of roots which I had generally heard recommended one half viz. from 70lbs. to 80lbs. per diem, according to the size of the animal, and to give a portion of these with each feed, as intimately incorporated as might be practicable with the more solid food. With this view I obtained Moody's cutter, which cuts the roots into thin ribands: these we turn over amongst the chaff, so that the animals cannot avoid eating them together. I observed that the animals under the change to which I have adverted throve faster, and were kept equally clean with one third less litter, by weight than we had found necessary on the former mode of feeding.

Yellow Birds and the Weevil.—The Binghamton *Republican* says that a farmer in that vicinity, who supposed that yellow birds destroy the wheat, commenced shooting them, and out of curiosity opened the crop of one of them. He found that, instead of eating the wheat, the birds destroy the weevil. He discovered as many as two hundred weevil in the crop, and but four grains of wheat, which had the weevil in them.



EXPANDING AND REVERSABLE HARROW.

There are various kinds of harrows in use in this country, but we do not remember to have seen any of the kind represented in the above cut. It may be worth the attention of those readers who delight in "improvement." As will be inferrred from the cut, the two bars on top of the frame work, are so connected with the teeth as to allow the under bars to swivel or turn, and thus the harrow contracts or expands in width. This is done by shortening or lengthening the chain. The harrow may be drawn either end forward. The teeth may thus be kept sharp without trouble or expense. Another advantage is, that it may be folded together for transportation. The first cost will be a little more than the common harrow as the teeth are shouldered and fitted with screws, but it may still prove economical. They may be ordered through McIntosh and Walton, of this city. The price will be from $12 to $16.



CYLINDRICAL BUTTER WORKER.

The advantages of this arrangement of the butter table are, that the butter can be kept cool in working and the application of the hands (often not remarkable for cleanliness) is avoided. The milk is more thoroughly worked from the butter, and the salt more evenly mixed than in the common way. This table and roller can be constructed by any tolerable mechanic, and should recommend itself to butter workers.

CABBAGES FOR COWS.—The editor of the *Agricultural Gazette* [Eng] estimates one acre of cabbages to be worth three acres of turnips for cows. He recommends sowing seeds in beds, either in autumn or spring, and transplanting toward the end of May, at the rate of 8,000 plants to the acre. One pound of seed will produce about 2,400 plants.

AGRICULTURE IN FRANCE.—A letter writer says: "A trip of six hundred and fifty miles, from the northern to the southern extremity of France, justifies me in the expression of my opinion that the sun does not shed its rays on so fair a land, or one so thoroughly cultivated. The whole country is literally a garden."

THE MONTHS.—SEPTEMBER.

"Next him September marched eke on foot,
Yet was he heavy laden with the spoyle
Of harvest riches, which he made his boot,
And him enriched with bounty of the soyle:
In his own hand, as fit for harvest's toil,
He held a knife-hook; and in th' other hand
A pair of weights, with which he did assoyle
Both more and lesse, where it in doubt did stand,
And equal gave to each as justice duly scanned."

SPENSER.

The name of this month has not changed its orthography since the time of the Romans, who designated it September, as being the seventh month from March. By the Anglo-Saxons it was called *Gerstmonath, Haligemonath.* Verstegan informs us that the first name originated from the circumstance "that barley, which that month commonly yielded, was anciently called *gerst*, the name of barley being given unto it by reason of the drink therewith made, called *beer;* and from bealegh it came to be *berlegh*, and from that to *barley.* So, in like manner, *beerheym*,—to wit, the overdecking or covering of beer,—came to be called *berham*, and afterwards *barm*, having gotten I wot not how many names besides."

The name of *Haligemonath* that is *holy month*, was given to it, according to a Saxon menology in Wanley's addition to Hicks, "for that our forefathers, the while they heathens were, in this month celebrated their *devil-gild.*" These *devil-gilds* (deofol-gild) were the sacrificed gilds of heathenism, and to them, according to Wilda and Lappenberg, may be traced the origin of the municipal system of the Saxons, for they seem to have combined the double character of a feast and of a court-day for settling disputes and trying offences, the priests exercising the criminal jurisdiction, and lending it the consecration of religion. Hence the Christians condemned them under the name of devil-gilds, and ould fain have forbidden the people from feasting in honour of the demons, as they chose to term it; but amongst the German race it was a difficult matter to put them down altogether.

Holy-Rood Day, September 14.—A custom peculiar to this day seems to have been the going into the woods a-nutting. Thus, in the old lay of Grim, the collier of Croydon:—

"This day, they say, is called Holy-Rood Day,
And our youth are all a-nutting gone;
Here are a crew of younkers in this wood
Well sorted, for each lad hath got his lass!"

"Oh (observes Miss Mitford), what an enjoyment this nutting is! They are in such abundance, that it seems as if there were not a boy in this parish, nor a young man, nor a young woman,—for a basket of nuts is the universal tribute of gallantry;—our pretty damsel Harriet, has had at least half-a-dozen this season; but no one has found out these. And they are so full, too, we lose half of them from over-ripeness; they drop from the socket at the slightest motion."

St. Michael and all the Holy Angels,—commonly called *Michaelmas Day*,—occurs on the 29th of this month, and is regarded as a festival both by the Roman and Anglican churches. This ancient practice of eating geese on Michaelmas-day is still retained in most old settled communities, although its origin is not easily traced. Young geese are now getting into high season, and this circumstance will, to some extent at least, account for the custom.

Time, and its attendant changes, has wonderfully altered the mode of observing Michaelmas in England and other countries. It being a legal quarter-day, people are reminded of the sometimes unpleasant duty of paying their bills and rents. It was not so once in "merrie" England. William Howitt, one of our most justly popular writers, well observes:—

"There have been merry times at Michaelmas—who would believe it? Yet there *have* been merry times at Michaelmas. Mayors and aldermen were then elected, and made their bows to each other; and be sure there were merry doings where mayors and aldermen were in the case. Stubble geese, like the aldermen, were now in prime condition; but being the weaker, according to the proverb, went to the wall, and thence to the kitchen, and twirled upon the spit. It was a jolly day in old Mother Church; she ordered everybody that could get it, to eat a goose in honour of St. Michael and all his angels. So in church and corporation, in abbey and town-hall, in farm and cottage, there

was an universal eating of fat geese; and nobody that I ever heard of complained of the injunction. Queen Elizabeth was eating her goose at the time that the news of the defeat of the Spanish Armada was brought to her, and no doubt she thought the Spaniards great and very green geese for having come there, and that they would be much greater if ever they came there again. Ever after, Queen Bess most assiduously ate her goose at Michaelmas, and, probably, with Spanish chesnuts, as people on the continent do now; or, if she did not, she would not have repented it if she had, for it is a princely addition. Queen Bess ate her goose all the more assiduously because it was an old saying that, if you ate your goose at Michaelmas, you would have plenty of money all the year round,—a prescription that, if its efficacy were at all proportioned to its agreeableness, people would be geese, indeed, not to comply with. How, indeed, could any one desire a pleasanter way of replenishing a purse? Queen Bess was always dreadfully in want of money; and as this came to be seen, and not the less to be felt by those who had the taxes to pay, and as no more Armadas came to be defeated, people lost all faith in eating roast goose, except the comfortable faith that Robert Southey had, when he addressed one in a sonnet, and asking the goose where it could have been so bravely fed, and, receiving no answer, added himself:—

> 'But this I know, that thou art very fine,
> Season'd with sage, with onions, and port wine.'

"Jolly times, then, it is clear, there have been at Michaelmas. Into these, except in the City of London, there has been made a dreadful inroad by the Municipal Reform Act, which forbade all eating of Michaelmas goose in a corporate capacity. Driven out of convents and corporations, yet I imagine roast goose at Michaelmas finds a welcome reception in many a farm, gentlemen's and other private houses. Roast pigs no longer run about with oranges in their mouths, crying, 'Come eat me!" but stubble geese really do seem to meet you at every turn, and cackle out invitingly that pathetic request. * * * * *

"But I fear me much that there are many houses where this portly visitor finds the door too narrow to get in. Some way, Catholicism having so long gone out of fashion in England, we have forgotten many of its sensible customs. Michaelmas has ceased to be anything of a holiday, except to landlords. A holiday! mercy on us! why it is a rent-day! All might lighten their purses, but that is a process with thousands which does not lighten the heart. It is quarter-day:—

> At length this jolly time begins
> 'Come neighbors, we must wag.'
> The money chinks, down drops their chins,
> Each lugging out his bag."

We may just add that the festival of St. Michael and all angels was instituted in the year 487, to commemorate the ministry of these holy angels, the messengers of *good will towards men.*

It is at this period, in many parts of England, when the old or off-going tenants give up possession of their farms, and the new or in-coming tenants enter; though the custom in some places is to take possession at Lady-day; while elsewhere it is usual to enter upon new farms at mid-April, May-day or even at Whitsuntide. Tusser, in his *September's Husbandry*, observes:—

> "At Michaaelms lightly new farmers come in,
> New husbandry forceth him now to begin;
> Old farmers still taking the time to him given,
> Makes August to last until Michaelmas even.
>
> "New farmers may enter (as champions say)
> On all that is fallow at Lent Lady-day;
> In woodland old farmer to that will not yield,
> For losing his pasture and feed of his field."

In this month hops are gathered and cured for market. This forms an important portion of the husbandry of a few of the southern counties of England, and in Canada the cultivation of hops is gradually extending. The hop is a climbing plant, having long, strong roots, and growing on poles to the height of fourteen or eighteen feet, according to the condition of the soil and the character of the season. The fruit consists of scaly seed-vessels of the female plants, and is gathered principally by women and children—the poles on which the vines grow being pulled up, and taken to large baskets or boxes constructed for the purpose. After the hops are gathered, or "picked," as it is commonly termed, they are taken to a building fitted up with grates and a hair-cloth for spreading them on, to be dried, and, when cooled, they are tightly packed in larger boxes or bales ready for market. This crop is perhaps the most precarious and uncertain of any within the range of field culture. Blights, arising from various causes, often injure the quality and diminish the quantity of this crop, and sometimes wholly frustrate the hope of the cultivator, and, in a few days, desolate the most promising plantations. No certain remedy has yet been found for these evils—high cultivation and manuring sometimes only tend to increase them, when they result from insect

depredations. The aphis or "fly is the most common and destructive form of blight.

"We cannot (says Howitt) boast of our vineyards; but we question whether Italy itself can show a more beautiful and picturesque scene than an English hop-garden in picking-time. The hops, which have luxuriantly climbed to the very tops of the poles, having on all sides their heavy heads of scaly flowers in festoons and garlands, and the groups of pickers, seated in the open air beneath the clear lustre of an autumnal sky,—age in its contentment, and youth in its joy,—and the boys and girls, which carry to them the poles, covered with all their nodding honours, may match, for objects of interest, the light forms and dark eyes of Italy." Tusser, who wrote in 1557, gives, in his *Five Hundreth Poyntes of Good Husbandrie*, the following rules for the choice of a

HOP GROUND.

"When fansie persuadeth, among other crops,
To have for his spe ding sufficient of hops,
Most willingly follow of choices to choose,
Such essons approved as skilful do use

"Ground gravellie, sandie, and mix'd with claie,
Is naughtie for hops, and maner of waie;
Or if it be mingled with rubbish and stone,
For drieness and barrenness let it alone.

"Choose soile for the hop of the rottonest mould,
Well donged and wrought as a garden-plot should;
Not far from the water, but not overflown;
This lesson well noted is meete to be known.

"The sun in the south, or else southlie and west,
Is well to the hop, as a welcomed guest;
But wind in the north, or else northerlie east,
To the hop is a ill as a fraie in a feast.

"Meet plot for a hop-ground, once formed as is told,
Make thereof account as of jewel of gold;
Now dig it and leave it, the sunne for to burn,
And afterwards fence it to serve for that turne.

"The hop, for his profit, I thus do exalt,
It strengtheneth drink, and it favoureth malt;
And being well brewed, long kept it will last,
And drawing abide, if ye drawe not too fast.

B.

Communications.

BRANCH SOCIETIES.

[*To William McDougall, Esq.*]

SIR,—I perceive in the last number of the *Agriculturist*, a letter to you from the Ingersoll Branch Society together with your answer; and as I do not wish, as a Director of the County of Oxford Agricultural Society, to let the management of that Society be under the cloud that letter casts upon it, will trouble you with a few lines to put the matter in its right shape.

That letter was written to ask your advice on a particular point of law, and all collateral circumstances were laid aside, together with some necessary parts, in coming to the point, a circumstance which I am sure the writer of it will, in a cooler moment, himself regret. The new act having been passed late in 1852 it could only come into operation after the annual meetings of 1853. (1.) In the year 1854, our Secretary refused to take the affidavit at the end of the act, as far as it concerned the Ingersoll Society, as it was not a township Society, nor one formed from a combination of townships, but took members from every part of the county, [2.] Now, the affidavit only provides for country and township societies; and if any one having read the affidavit, inspects the act, he will see that the Branch societies are invariably so mentioned in conjunction with the township societies that one is irresistibly led to conclude that the township societies, or those composed of a combination of townships, are the only legal branches [3.] This matter was brought up and fully canvassed at the annual meeting of 1854, and the Ingersall Society were requested to change their name, so that our Secretary might be able conscientiously to include that Society in his affidavit. Whether at the time theyrefused to do it, or neglected to answer the letter, I forget; I believe it was the latter. A resolution, however, was passed, that the report of that society should be forwarded to the Board of Agriculture, together with the others, stating the peculiar nature of the case. This was done and *their money paid over to them*, but they promised to forward to the Board the names of the townships of which their society was composed. This they now say, was done without the authority of the Board, and they refuse to recognize it, though it does seem singular that any member of the Direction should have taken such a step without the orders of his fellow officers. This year they repeated the proceedings of the previous one, and *again their report was forwarded, as before, to the Board;* (you will recollect that it was stated we refused to receive their reports, so as to keep them out of their share of the public grant;) and the answer of the Board was, that unless they changed their name, so as to bring themselves within the bounds of the statute, their portion of the public money would be withheld. (4.) You will perceive that it was the Board of Agriculture that in the first year requested them to change their name, and in the second threatened to withold the grant in case of a refusal to do so. The matter of a name may seem trifling enough, as indeed it did to all of us; but as we have to act under the leading

agricultural authority of the country, and have an act of Parliament to guide us. I think no one can deny that we would be unjustifiable were we to act in opposition to our interpretation of that law; and it seems to me that the *onus* of the unfortunate misunderstanding rests with those who will not obey it even when requested to do so, by the highest authority in that line we possess, rather than upon those who endeavour conscientiously to discharge the trusts they have undertaken. I hope this letter will serve to remove some of the misapprehension as to our motives and conduct, that seems to have taken possession of your mind; and also to clear our cause in the eyes of the public.

I remain, Sir,
Your faithful servant,
HAMILTON FARMER.

P. S. It is a pity the law cannot be made so plain on the subject that no one could misunderstand it; for if the framer reads it one way, and the expositors of it another, there evidently is room for a mistake,—which should not be. (5.)

East Zorra, July 18, 1855.

REMARKS BY MR. MCDOUGALL.

As Mr. Farmer has mentioned *names* and *places* which we did not desire to make public, we are compelled to follow his example. The dispute is an awkward one, and as important facts have apparently been lost sight of in the original statement of the question, it is probably better that the agricultural public should not now be left in the dark as to any part of it.

We have no interest in, or preference for, one side over the other, and, when appealed to, gave our opinion, *upon the case stated*, according to our conscientious judgment and belief. If Mr. Farmer's version is correct, it would appear that the whole case was not stated to us, and that the difficulty is more technical, or imaginary, than real. To save repetition, we shall notice the points of Mr Farmer's letter in the order he has stated them.

(1.) A slight error. The "New Act" was passed in August, 1851. It was "consolidated," with other acts, *in pari materia*, in 1852, and re-enacted. All existing societies were continued, and very few alterations were made in the text of the Act—none, we believe, that could affect the question in dispute at Oxford. It would therefore appear, as stated by the Ingersol Society, that they had received their share of public money without question until 1854; the illegality (if any) existing in full force at the time. This, however, is not material, as the County Society would be justified in acting upon the law when they discovered its meaning. We merely call attention to the point, as there is evidently misapprehension in regard to it.

(2.) This is a material fact, and we confess that Mr. Farmer's statement, if literally true, puts the Ingersol Society out of the Act. But is there not some misapprehension here also? A Society organized at Ingersol must be *in* North or South Oxford, or both. Are we to infer that *other* societies have been organized in these townships? If not, and the Ingersol Society has conformed to the law in all other respects, we do not see how its legitimacy can be questioned, merely because the word "Ingersol" is prefixed to its name. Taking members from "every part of the county" is no discredit—certainly not *mala prohibita*. The Act makes no restriction as to residence; any "fifty persons" may organize a County Society, and a "sufficient number of *persons*" to raise "ten pounds" may form a Township or Branch Society.

(3.) The form of affidavit given in the Act is only suggested as an example. The words are—"an affidavit which *may* be in the form," &c. (see sec. 37). It should be varied to suit the circumstances of the case and the conscience of the deponent. A Township Society, *i.e.*, a society organized "in a township," or in any "two or more together," is undoubtedly the only legal Branch. But does not the Society in question answer this description?

(4.) The contradiction as to facts we, of course, are unable to reconcile. The Board of Agriculture is as much bound by the statute as the societies. Its "duty" is to see that societies have "complied with the law;" but it has no power to impose conditions beyond the Act, or relieve from duties enjoined by it. The only "authorized" expositors of this, as well as other statutes, are the Courts of law. It appears that the Board, and not the County Society, is responsible for the "decision" that the Ingersol Branch has *not* complied with the law. This fact should put an end to the ill-feeling between the disputants in Oxford.

So far as we can understand the dispute—and we confess the *real* point has not yet been made clear to our vision—we think it is susceptible of adjustment without serious difficulty. We know nothing of the grounds of the Board's decision in this case beyond what is stated by Mr. Farmer; and we prefer to make our "deliverance" upon it—since it has gone so far—without communication with that body, or its secretary. The law, we

think, is sufficiently plain if properly examined. One question, in our opinion, will settle the whole matter—Has the Ingersol Society made the "Declaration" (schedule A) prescribed by the Act and transmitted it to the County Society? If yea, then it is within the Act, and can enforce its rights; if not, the County Society is justified in refusing to recognize it.

Mr. Farmer speaks of the "Affidavit" (to which we have already referred), but says nothing of the "Declaration." This is the legal *Charter* or *Constitution* of the Society—the evidence of its existence. It must be properly made, and a true copy filed with the County Society (sec. 33).

We *infer* from Mr. Farmer's statements that no township or townships are mentioned in this "Declaration." If this *fact* had been stated in the first communication, our reply would have been more to the point, and probably more satisfactory to Mr. Farmer. The "Declaration" *requires* the township or townships to be specified. It differs from the "Affidavit" in this—the latter "may" be followed (sec. 37); the former *must* be "in the form of the schedule A" (sec. 33). We do not think the addition of the word "Ingersol" to the name, provided the township or townships were mentioned, would be held to vitiate the Declaration. We state this from our recollection of legal decisions in analagous cases; but the form must be followed substantially; all material facts must be stated, and, as nearly as possible, *in hæc verba*. The *omission* of the township would, undoubtedly, be held a material omission.

(5.) The Act, we admit, is not perfect; but we believe it is as free from ambiguity as any similar act in the statute-book. We notice some misprints ("and," sec. 29, third line, was "be" in the draft), and two or three absurd "amendments" were made by M.P.P.'s who had not read the whole act; but if no more doubtful cases than the one in question—assuming that we have traced the difficulty to its true source—grow out of its operation, we shall feel satisfied as to our share in its enactment.

USEFUL ASSISTANCE OF CHEMISTRY TO THE FARMER.

(*To the Editor of the Canadian Agriculturist.*)

Sir,—Dr. Johnson has said that the cultivation of the soil is "the great art which every government ought to protect, every proprietor of land to practice, and every inquirer into nature to improve." Since his day, a more judicious system of cropping, and improved machinery for making the soil and altering its texture, have been gradually taking the place of the destructive husbandry and clumsy implements of our forefathers. The thorough drain has been fighting its way from county to county; the subsoil plough has been following it, giving a new surface to our worn out fields; and that important instrument which mechanical science has lately presented to the farmer, the clod crusher, is gradually coming into use. By such means much good has been effected, and more will yet be done to improve the mechanical condition of our fields.

But, within these few years, many of our intelligent farmers have felt that something more was required to place their occupation in its proper position. Since the time when Liebig presented to the British Association his celebrated report on the application of chemistry to agriculture, farmers have been more alive to the advantages that may be derived from that science. Though it is only the other day that it has been brought to the assistance of the farmer, it has given him useful information upon subjects respecting which formerly the greatest ignorance prevailed. For centuries he had applied to his fields lime and other chemical agents, without having the least idea of their composition or of the conditions required for the successful growth of his crops. By giving him information on these subjects, chemistry has contributed, in innumerable ways, to facilitate his labour, and has enabled him to bring into profitable cultivation districts which, in former times, were regarded as hopelessly unproductive.

It has been discovered that every plant that is cultivated by man, whether for food or clothing, derives the materials by which it increases in size and forms its stem, its leaves and its seed, from three sources—from the air which surrounds it, from the watery vapor which the air at all times contains, and from the soil in which it is fixed. The business of the farmer is to increase the development of plants, and to remove everything that tends to impede their healthful growth. It is evident, therefore, that, to conduct his work successfully, he should know something of the nature of the materials which the growing plant receives from the air and the soil for the formation of its parts; of the substances which enable three lbs. of turnip seed, when spread over the surface of his field, and covered over with a layer of earth, to expand into

a crop of nutritious bulbs weighing thirty tons, and of leaves weighing ten tons.

Now, as the manufacturer who desires to acquire the knowledge of the best means of conducting the processes of his art commences by making himself acquainted with the nature and properties of the materials which he employs; so must the farmer, the manufacturer of food, as the first step to the improvement of his far more important operations, endeavour to acquire a knowledge of the properties of the substances from which food is formed, and especially of those materials which, when not supplied by nature in sufficient quantities, must, by his exertions, be placed in the soil. Formerly men were content to speculate upon this subject; but now, in place of conjecturing, they make experiments; and by the refined processes and apparatus of modern chemistry, plants have been analyzed,—that is, separated into the parts of which they are composed,—so that we are enabled, as it were, to count the number and ascertain the weight of every brick which is employed in building up their beautiful structure. The first experiment which the chemist makes upon a plant shews him that it consists of two parts possessing very opposite characters. When he places in a vessel used for such purposes—a crucible, as it is termed—a portion of a plant, and exposes it to a strong heat, it takes fire and burns, and he discovers that a part of it is combustible and disappears into the air, and that another part of it is left in the vessel as incombustible ashes. From the mushroom to the oak, plants are found to consist of a part that is combustible and a part that cannot be consumed. The great bulk of every plant, that is, from 90 to 99 lbs. in every 100 lbs. that we consume, is dissipated by heat; or, in other words, is converted into gaseous, invisible substances, like the gas that illumines our streets.

We will, in the first place, inquire what is the nature of the large portion of the plant which disappears. That portion, which is frequently termed the organic portion of the plant, has been found, when examined, to be composed of not more than four substances, derived by the growing plant from air and water. The first of these, and that which forms the chief bulk of this part of the plant, is a hard, black, solid substance, a pure kind of charcoal, termed carbon. This is insoluble in water; but in every part of the world it is found forming a compound with a gas named oxygen, which is an ingredient of that great ocean of vapor that surrounds our planet, and which we call the atmosphere. The compound which the union of carbon and oxygen forms, is named carbonic acid, and constitutes about two gallons out of every five thousand gallons of the air we breathe. Carbon is an invariable constituent of plants, and wherever a fire burns, vegetable matter, as in the manure heap, decays, or an animal breathes, carbonic acid is produced. This compound is also locked up in immense quantities in limestone rocks. It is a constituent of the bones of animals, and is also, in volcanic countries, given out in large quantities, in the gaseous state, from fissures in the earth. It is soluble in water, and therefore we find it in the waters of our springs and rivers. It is this gas that gives soda water and the various fermented drinks their agreeable briskness. In the laboratory of the chemist and soda water manufacturer, it is prepared by the action of an acid upon some of its compounds.

When the chemist pours some vinegar or vitriol upon pieces of limestone, he produces a bubbling up, or effervescence, as when a soda powder is prepared. The cause of the disturbance in both cases is the same—the carbonic acid gas confined in the compound being set free, and escaping rapidly in its gaseous form. Carbonic acid gas is also driven off from limestone when it is burned in the kiln It is produced in large quantities in our bodies, and it is necessary to the continuance of health that we should constantly throw it off. This we do in breathing. The air that we draw into our lungs contains only two gallons of this gas in five thousand gallons, but when we expire it again, it is found to contain, in the same quantity, about two hundred gallons. Thus, what is injurious to our existence is thrown off from our bodies, and together with the carbonic acid produced by the fires burned over the earth, and which, if allowed to accumulate in the air, would render it as prejudicial to animal life as the fermenting vat of the brewer, is beautifully adapted for the support of the plants which are to afford us food, and which have their leaves furnished with innumerable pores to draw it into their structure, where its carbon is employed as one of the materials for building up our crops. Being soluble in water, it is also dissolved and carried down to the soil with every shower of rain, and thus its injurious accumulation in the air is prevented, and the health and harmony of creation preserved.

The next most important ingredient we find in the organic part of plants, is also one of the most portant and extensively diffused substances in na-

ture. It is a thin, elastic, and invisible air, named oxygen, which forms a fifth part of the atmosphere, and eight parts out of every nine of water, and is the principle in the air upon which the life of animals depends. Like carbonic acid it is contained in large quanties in the rocks and minerals which compose the crust of the earth; and by applying heat to some of these compounds, it can be driven off in the state of gas, in the same manner that carbonic acid gas is expelled in the operations of the lime burner. This gas forms about a third part of plants, when deprived of their water; therefore its properties must be interesting to the farmer. Like the air when pure, it has neither color, taste, nor smell. The vessel in which it has been collected seems to contain merely common air, and neither by taste nor smell, nor by our eyes can we detect any difference in its contents. But chemistry is able to assist our senses; it gives us new methods of interrogating nature, and enables us to understand the language of her replies. Thus if we place a piece of wood which has been ignited and just extinguished, into a vessel containing carbonic acid, it soon ceases to glow just as if held in the hand; but if we place it in a vessel containi g oxygen, instead of dying out, it will burst into flame, and burn with increased brilliancy. This is what chemists call an experiment, and it convinces us that the second vessel must contain something very different in its properties from the air in that first examined; that something is oxygen gas, which is not less distinguished by its power of supporting flame, than by sustaining animal life. It is certain that without its presence in the air no fire could burn, no animal could live. It is the agent which nature employs in some of her most important operations; by it she ploughs up the hardest rock, and reduces into their primitive dust both the vegetables that cover the earth, and the animals that feed upon them into forms fitted to support new races.

When a piece of coal, which is an impure kind of carbon, consumes in fire, it is the oxygen of the air that unites with it and carres away its carbon in the form of carbonic acid gas; and when the myriad of leaves which fall upon the ground in autumn gradually disappear from our sight, the same thing occurs; the carbon which forms so large a portion of the substance of the leaf, unites with the oxygen of the air, and becomes an invisible gas. When a piece of iron rusts, and the dense metal is converted into a friable mass, it is oxygen also that produces the change. When so large a quantity of oxygen is withdrawn from the atmosphere in the respiration of animals, in the combustion of fuel, and in the decay of vegetable matters, it becomes an interesting inquiry how a sufficient supply of that gas, so essential to animal existence, can be maintained. It has been discovered that this is performed by the vegetable tribes. We will consider for a little this arangement, which is one of those beautiful provisions which nature so frequently exhibits. Plants hang out into the air that surrounds them, waving leaves furnished with innumerable mouths or pores to suck into their structure the carbonic acid which is to supply them with the carbon which they require. During the night season, the gas which is drawn in, passes away unaltered; but no sooner does the light of the sun play upon the green leaves of the plant, than carbonic ceases to be given out. It undergoes decomposition, it is broken up into its elements in the laboratory of the vegetable; its oxygen escapes into the air, while its other element, the carbonic, is retained and employed in the developement of the plant. The air we have seen, when thrown out of our lungs, has become incapable of sustaining animal life. Its composition has been altered, it has become poor in the vital air, the life and flame supporting oxygen, but loaded with the unwholesome principle, carbon. But vegetables, in the wonderful arrangements of creation are not only charged with the task of converting into food the raw materials around us, but their very existence is made to depend upon their acting upon the air, so as to withdraw from it the unwholesome carbon, and restore it the oxygen which animals consume.

Another of the substances which the combustible part of the plant is found to contain, is a gas named hydrogen, derived from the watery vapor of the atmosphere. It may appear strange to those unacquainted with the discoveries of chemistry, to be told that a gas is one of the constitutents of water; yet science has revealed to us that that pure substance, which is one of the first necessaries of life, is not, as the ancients imagined, a simple element composed (like iron) of only one kind of matter, but made up of two gases, one of them the gas oxygen, and the other a remarkable inflammable gas, which is one of the ingredients of the coal gas, which illuminates our streets. This gas is termed hydrogen, and though it is not met with in nature in its separate state yet we can readily procure it from its most important compound, water, when in preparing carbonic acid gas, vitriol is poured on limestone, the compound of that gas with lime, the vitriol seizes upon the lime, and and the gas escapes. If in the same way we could place in the water some

substance that would seize upon the oxygen, as with the limestone, the compound would be broken up, and the hydrogen being a gas, would escape. There is a substance which possesses that power. It is a curious metal termed potassium, which, whenever it is presented to oxygen in air or water, seizes upon and unites with it. If we throw a piece of it into water, it unites with some of its oxygen, and the other element of the compound, hydrogen, is disengaged as a gas and takes fire. The same decomposition of water can also be produced on a larger scale, and on the same principles. The atmosphere is continually charged with moisture which descends upon the growing crops in the soft dew, and the refreshing rain, and enters into the interior of the plant, where under the influence of that mysterious principle, life, which presides over the motions of the animal and the vegetable, it is decomposed as required, and thus made to contribute to their increase.

(*To be continued.*)

HOW IS STILTON CHEESE MADE?

Mr. Editor,—A gentlemen residing near Guelph, whose name frequently appears in your journal, has obtained some notoriety for making what he calls "Stilton Cheese". I am told he declines to explain the process of its manufacture, and I do not remember to have seen any account of this kind of Cheese in the *Agriculturist*. I should be glad to learn the mode of making this Cheese, and if you can discribe it in your next number, you will perhaps oblige more than one of your subscribers.

Yours respectfully,

W. D.

West Flamboro, Aug. 3rd 1855.

We have never made Stilton Cheese; and, therefore, have no practical knowledge of the manufacture; but we believe the *secret* of the process is simply to add the *cream* of the night's milk to the new milk of the morning. It is thus sometimes called Cream Cheese. The name is derived from its having been first made extensively at Stilton, in Leicestershire, Eng. It is now made in Cambridge, Rutland, Northampton, and other counties in England; and by Mr. Parsons, and probably others, in Canada.

One of the Agricultural Reports of the County of Leicestershire thus describes the process:—"The night's cream is put into the morning's new milk, with the rennet; but when the curd is come it is not broken, as is done with other cheeses; but is taken out with a soildish altogether, and placed in a sieve to drain gradually; and as it drains it is pressed till it becomes firm and dry; being then placed in a wooden hoop, and afterwards kept dry on boards. It is turned frequently with cloth binders round it, which are tightened as occasion requires."

In Webster's Encyclopædia of Domestic Economy, it is stated that these cheeses are of "small size, from six to eight pounds weight; and are of a cylindrical form, made in a deep vat, and are not considered sufficiently mellow until they are two years old, nor ripe until they exhibit spots of blue in the interior, marking the commencement of decay."

We find the following in one of our American exchanges, contributed by a correspondent. The directions are substantially the same as those above quoted:—

"This cheese was first made, we are told, by a near relative of the landlord of the old Bell Inn, near Melton, Leicestershire, England, where its reputation was such that it sold for a long time for half a crown per pound. I am not aware that any attempts have has yet been made to produce Stilton Cheese in the United States; but Mr. Henry Parsons, of Guelph, Canada, has manufactured it of a quality said by good judges to be equal to that made in the mother land. There appears to be nothing very peculiar in the process as detailed by those who understand it, and considering the cheese really possesses the high superiority just claimed for it, the only thing surprising at all to me is, that its manufacture has not become not only common, but universal.

As some of your readers may have a curiosity to know the process, I will give a recapitulation recently given me by a dairyman from the "old country," who is perfectly familiar with the details, having lived many years on a farm where Stilton Cheese, of the first quality, was the principal dairy product. By way of premising, allow me to say that I am assured that the excellencies of this cheese have been by no means exaggerated. The entire product of the very extensive dairy of which he was honored with the general supervision, sold ordinarily for about double the price of other cheese, and the demand for it was such that the regular customers often bid upon each other, and not unfrequently took it in its immature state, or before it had become sufficiently ripe to cut. I will now proceed to give his directions in the fewest possible words:—

The night's cream, without any portion of the skimmed milk, is put to the milk of the next morning, and if cheese of superior description and richness is desired, an additional allowance of cream is afforded, mixed with a little fresh butter. The rennet without any coloring, is then put in, and when the curd has come, it is immediately removed without being broken, and put whole into a sieve o

drainer where it is pressed by means of weight until the whey is completely expelled. It is then put with a clean cloth into a hooped chessart, (mould,) and pressed, the outer coat being first salted. When sufficiently hard, it is removed, and placed on a clean dry board, bound closely in a cloth (which is changed daily) to prevent its cracking. When the cheese is tolerably well dried, the cloth is removed, and no further care is required, except turning it daily and occasionally brushing the surface.

The cheese is never large, seldom weighing more than ten or twelve pounds, yet requires two years to perfect iis excellencies, and bring it to complete maturity, for they are not supposed to be fit for use till they have begun to decay. To accelerate the process of ripening, and prepare them more speedily for the market and the table of the fashionable epicure, they are often placed in warm damp cellars, where the putrefactive process is often quite rapid, or they are even wrapped in strong paper and sunk in hot beds, which prepares them much quicker than they can be by the former process. The shape of these cheeses bears little resemblance to that of the common kinds, pressed in wide hoops—being that of a sugar loaf, though somewhat less in length and of larger diameter.

We hope "W. D." will be able, after reading the above, to make a genuine "Stilton." We shall expect to hear from him at the end of "two years,"—probably less, for in this climate we think such rich cheese will "begin to decay" a little sooner than in England. It is said that the "decay must not go beyond a certain point,"—a rather indefinite statement, but no doubt a true one. We remember that upon cutting one of Mr. Parson's Stiltons, three or four years ago—although it was not more than eighteen months old—we thought it had considerably passed the "certain point."

A FACT IN STRAWBERRY CULTURE.

Sir,—In the fall of 1853 a friend gave me four Strawberry plants of different varieties, one only survived the winter, and during the next summer, threw out runners and young plants abundantly, with these early in the spring of 1855, I planted a large border, many of the plants sent flowers, but no fruit, just so, the parent plant, although extremely luxuriant. They are all I suppose staminate flowers of the white wood variety. Is this natures law? Stamens to produce stamens, *only* unmixed with pistelates? If so, will any strawberry culturist, point out how the one can be distinguished from the other. In nothing I have read, has this simple fact been noticed, further than a portion of Staminates, were necessary to fructification.

Truly yours,

JAMES JONES.

Stamford, July, 8th 1855.

RAISING SEEDS.

(*To the Editor of the Agriculturist.*)

Sir:—The subject of raising seed has, of late, come under my notice more particularly; and as I am considerably interested in it, I would beg leave to refer the subject to you for information. I take the *Canadian Agriculturist*; but as I have not seen anything particular upon this subject, I hope that you, or some of your Correspondents, may have something that may instruct me. I am young and have not tested the matter by actual experiment, because of the loss of time and labour; but I hear that, if turnip seed is sown in the Summer, and the turnips standing there all Winter and run to seed in the Spring, the plants raised from that seed will not bottom, but will run to seed again; cabbages the same.

Also that Radishes, sown in the Spring, and left standing there to seed in the same summer, the plants raised from that seed will not bottom, but will run to seed again.

Also Carrots and Parsnips raised from the seed in the Spring, if these roots be left in the ground all Winter to run to seed the ensuing Summer, that the seed from these plants will not be good; and if left to do so three or four years will degenerate to a wild state, and so be destructive to life; and, that, at no time, the Seed is good that is raised on the branching stalks, only the primary or leading stalk is good for seed to raise good healthy plants.

Now Sir, if this is true; if you can answer this by actual experiment or any scientific law or knowledge from any of your Correspondents, I shall feel satisfied.

Also Innoculation, or the mixing of one kind of seed with another, while growing is a mystery to me. I am convinced that it is so, but *how* and by *what means* it is effected I cannot tell. I wish to know, Sir, if you have anything upon this subject that will instruct me; and what arrangement to make in planting seeds to prevent this, if there is any?

I might just state now, that I am very much pleased and instructed by your numbers of the *Canadian Agriculturist*; this is the first year we have taken it; and we think that it is well calculated to improve the state of Canadian farming, if well read and studiously applied.

I remain your most teachable servant,

BENJAMIN GOTT.

Williams, July 14, 1855.

[Will some of our readers having practical experience in these matters, give our Correspondent the benefit of their knowledge?—Editor.]

Miscellaneous.

ON THE MANAGEMENT OF CIRCULAR SAWS.

The subject of circular saws is one of particular interest to almost every portion of our country.—Reciprocating saws were at one time almost exclusively used in preparing the lumber, but the obvious disadvantages arising from their intermittent motion, notwithstanding many improvements made on them, as led to their partial abandonment, and the substitution of circular saws in their place. The day cannot be far distant when (except for scroll work,) straight saws will be numbered among the the things that were, for circular saws possess many advantages over them, especially as it regards the greater speed at which it can be driven, and the greater quantity of work they can turn out in a given time—as much time is lost with the straight saws in getting ready to work.

The greatest difficulty experienced in managing circular saws lies in their tendency to heat. Wherever there is much friction experienced in one, it will get hot and expand, and in that condition will not make good lumber, and sometimes, indeed, it will buckle, and thus become materially injured.—If the heating of the saw be uniform throughout, no further harm will be done than its becoming "limber," and unable to sustain itself under a strong feed, but whenever it is reduced in temperature, it assumes its original form. It is very seldom, however that the expansion of a circular saw, when heated is uniform, as the friction is always greatest on the side nearest the log, owing to the plank yielding. Friction is caused by a two small kref being cut in the log, and by the springing of the timber. In the latter case, when a line is cut, each portion of the log has a tendency to assume the form of an arch with the bark turned inwards; this presses that portion of the log between the head blocks against the saw, while at the same time the opposite side of the saw is entirely relieved, thus causing unequal friction and expansion.

In adjusting a circular saw to timber, the blade is not placed parallel to the log, but has what is termed "rake," that is, the cutting edge of the saw comes nearer the log than the opposite edge. This is done for the purpose of allowing the saw teeth to ascend without scratching the face of the log, and also to relieve the center of the saw where the tendency to heat is the greatest. If, however, too much *rake* be given the saw, it will cause undue friction, and the inner part of the saw will heat and expand.

The arbor of the saw should be well lubricated, and not allowed to get hot, as it transfers the heat to the center of the saw. Whenever the center of a circular saw becomes heated, it has a tendency to cup. The side of the saw which expands most by heat becomes convex, and if run too long, it will not return to its former shape when coolled, but will require hammering on the edge to straighten it. This is a job which requires the utmost skill, and besides, few who use such saws have suitable anvils to straighten them upon. To such the following would be useful information:—Prepare a suitable number of annular papers with their inside diameter about one inch less than that of the hub, and place them on the shaft adjoining the concave of the saw. Prepare a lot of similiar papers with their inside diameter equal to that of the hole in the center of the saw, and their outside diameter about one inch greater, and place these on the saw shaft adjoining the convex side of the saw. A sufficient number of these being so placed in they are tightened in the hub, and the saw brought up true in the face. Care must be exercised to put in no more papers than will straighten the saw. It is not, however, *absolutely* necessary to take the *cup* out of a saw until it becomes of a considerable size, for a saw will do good work even when cupped a quarter of an inch; the increased difficulty, however, of managing it in this condition, renders it advisable not to work it in such a state. In working cupped saws, the teeth should be made to fill a wider guage on the convex than on the concave side; and if the tendency to heat on the center continues, it should have more rake, if cupped towards it. The teeth of a cupped saw in ascending, in all likelihood, will scratch either the face of the log or the plank. This is another and a sufficient reason to straighten it at once.

The edge of the saw is guided by a pair of rollers or wooden pins placed just below the log and near the front edge. Pins are preferable to rollers, for they do not pack a ring of sawdust on the saw when it passes between them, as rollers do. The proper position of these guides relative to the saw, varies under different circumstances, but in no one case should both press against the saw at the same time, as they would be sure to heat it. When a saw heats on the edge, it is far more difficult to manage than if heated in the center, for a "cupped" saw still presents a straight line on the edge, while a buckled saw, (one stretched on the edge,) does not.

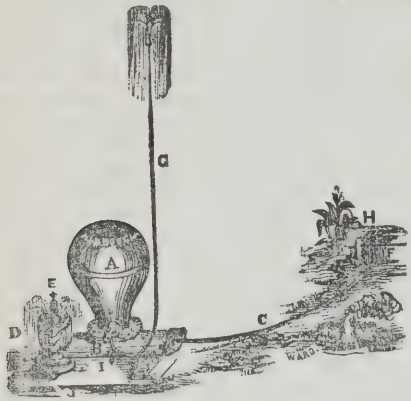
The edge of a saw may become heated on account of the teeth not being in proper shape. If any part of a tooth, except the edge, rubs on the log, the friction at that part will heat it. If sufficient depth of tooth is not preserved, there will not be sufficient room to free itself from saw-dust, which will crowd in the kref, causing undue friction on the sides of the teeth. If a saw cuts out of a straight line, it will press hard against one of the guides, and aiso cause undue friction. It should never be forgotten that the heating of a circular saw causing cupping or buckling, is always the result of undue friction; to avoid this, therefore, every effort should be exercised. A saw sometimes gets buckled from other causes than heating. Its roller guides are sometimes placed to bear too *hard* against it, and when this is the case the sawdust is pressed between them with a force sufficient to thrust the rollers out of place. Or if the rollers be so rigidly fixed as not to be moved by such pressure, they tend to stretch the saw at the point where it passes between them. Gumming machines also tend to stretch the edge of the saw.

It is not necessary at all times to straighten a buckled saw on an anvil, especially if only a narrow ring near the edge of the saw is stretched, as it may

be remedied by cutting through it, either by drilling a hole at the root of each tooth, or filing towards the center of the saw until the stretched part is cut through.

Water is sometimes used to cool a saw; it also enables a saw to work in a smaller kref, thus saving power; and it also acts as a partial lubricator. It should be directed in jets on each side of the saw near the center. Its use, however, should be avoided in cold freezing weather. Allowing the saw shaft to play endwise, is one of the most effectual means of keeping the saw cool. When the timber springs against the saw, tending to heat it at the center, the end play of the shaft allows the center of the saw to yield; at the same time, the guide pins at its periphery keep it in line and the friction is therefore reduced, and liability to heat diminished in a corresponding degree.—*Scientific American.*

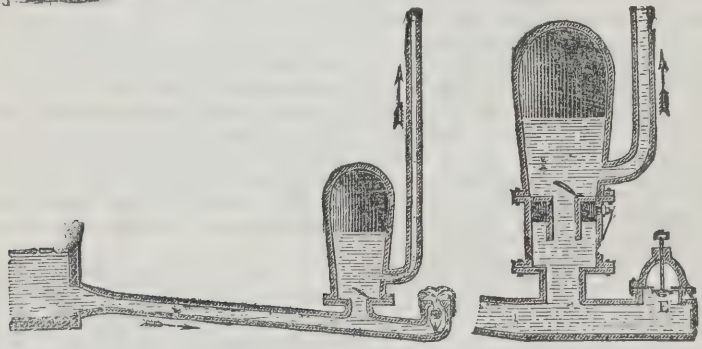
THE HYDRAULIC RAM.



The Hydraulic, or Water Ram, is a very ingenious modern invention; and as economical and useful as it is ingenious. Of course, it is necessary that there should be a running stream within a reasonable distance of the spot where the water is required to be delivered. The principle on which it acts, may be understood from the accompanying cuts and description:—

EXPLANATION.

H, is the brook, spring, or fountain: C, the drive pipe: G, the pipe which conveys a part of the water from the drive pipe to the place where wanted: A, the air chamber of the ram: E, top of brass valve:



D, water wasting through the valve, by which the power of the ram is secured. A fall of at least 18 inches is necessary: three or four feet is better. The greater the fall, the higher can the water be delivered. Ordinary rams raise 20 gallons per minute: they are made to raise 50 gallons. With a fall of five or six feet, a portion of the stream can be raised upwards of 100 feet. For the purpose of irrigation, and for conveying the indispensable element to the farm house, barn, &c., this ram is well worthy the attention of Canadian farmers who need its aid. The following explanation of the *modus operandi* is copied for the benefit of those who may be curious in such matters:—

The hydraulic ram is a simple mechanical apparatus, constructed upon philosophical principles, and is used very effectively in raising a portion of the water from a spring or running brook above the level of its fountain head. The following description, it is believed, will be easily understood. Suppose a water pipe is laid along down the course of the stream through which the water is required to pass. The lower end of the pipe is closed, and near that extremity is an orifice on the upper side which is opened and closed on the inside by a puppet valve shaped something like an inverted barrel bung. There is also another similar orifice and valve opening outward from the main pipe, and into an air vessel. Now let both valves be closed. As there is then no means of escape for the water in the pipe leading from the spring, it is brought to a state of rest. The valve opening inward is loaded, so that its gravity is greater than the pressure of the water at rest in the pipe; it consequently falls into the pipe, leaving the orifice open, through which the water immediately begins to rush with increasing velocity, until its momentum becomes such as to push up the valve to its place in the orifice. The momentum of the water suddenly stopped in its course, is such as to lift up the other valve opening outward into the air vessel, through which the water rushes, compressing the air into a smaller compass, until the re-

action of the air is in equilibrium with the action of the water, when the valve No. 2 falls back to its place and prevents the water in the air vessel going back again into the main pipe The water in the main pipe then having no escape, is again brought to rest, whereupon valve No. 1 falls down again by its own weight, and the process is again repeated. From the air vessel a discharging pipe leads off to the upper story of a house, or any other place where the water is wanted, to which point it is driven by the elasticity of the compressed air in the vessel. Of course the amount of water raised, compared to the whole, will be in inverse ratio to the elevation of the discharging point above the fountain-head. The momentum of the blow forcing the water into the air vessel when the valve closes, was well illustrated at the time the fountain was first put in action on Boston Common, where, it will be recollected, the momentum of water was so great at the sudden stoppage of the jet, as to burst the pipes and deluge the Common.

THE TELEGRAPH.

It is surprising to contemplate the rapidity with which, in the last few years, magnetic telegraph lines have extended over Europe. For instance, we see it stated that, whereas France, at the close of 1852, possessed lines covering only 1.200 miles, they will have, at the close of the present year, over 8,000 miles in operation. Europe contains some 35,000 miles of telegraph, the United States 42,000 miles—But the triumphs of the past few years in that respect appear small and contemptible, in contrast with those which are reserved for the remainder of this decade. We need only indicate the gigantic works that are projected, and which a few years will see realized, to cast into the shade the fabulous exploits of the gods and giants of antiquity.

First there is the contemplated enterprise of connecting London with Canton, or one of the other commercial ports of China. Then there is the other project of establishing a similar telegraph connection with Australia. It would hardly be believed at the first blush that neither of these undertakings would necessitate the laying of more than four hundred miles of submarine cable in any one continuous stretch; but a careful examination of the globe will remove all scepticism on that point. The Architect of the universe has, it would seem for this purpose, placed islands in the ocean at such intervals as to serve as stepping stones and halting places for the telegraph. There is no doubt whatever as to the feasibility of laying down four hundred miles of submarine cable in one stretch, as it has been already tested to the extent of 350 miles in the line across Black Sea from Varna to Balaklava. Then, again, there is that other gigantic enterprise in contemplation, of connecting the American and European continents by a sub-marine telegraph extending from St. John's, Newfoundland, to Cork, in Ireland, a distance of over sixteen hundred miles. And even the magnitude of that undertaking is eclipsed by another proposition: to stretch a line around the world, commencing, say, at Petersburg, stretching through Siberia to the confines of Russian America, and traversing the whole breadth of North America to its most easterly limit, and then crossing the Atlantic, either by an independent line or by connection with that which we have just mentioned, and which is to be in operation in January, 1858, a little more than two years hence. By the same time we may have San Francisco bound to New York.—*Herald.*

A GREAT STEAMER.

Messrs. Napier & Sons, of Glasgow, Scotland, have just launched upon the Clyde, the largest steamer afloat. She is named the Persia. was constructed for the Cunard Company, and designed to ply between Liverpool and New York, taking her place in the line in October. The Persia far exceeds in length, strength, tonnage, and steam power the Great Britain or the Himalaya, and exceeds also by no less than 1,200 tons, the internal capacity of the largest of the present Cunard liners.

Her chief proportions are these: Length from figure-head to taffrail, 390 feet; length in the water, 360 feet breadth of the hull, 46 feet; breadth over all, 71 feet; depth, 32 feet; burden. 3,600 tons. According to the strict government rule of measurement, her power is equal to that of 900 horses. according to the plan laid down in Earl Hardwicke's bill, her power is equal to that of 1,200 horses; and according to Jas. Watt's old established rule, she is expected to work up to the pitch of between 4,000 and 5,000 horses. The keel consists of several bars of iron about 35 feet in length each, joined together by long scarfs, and, as a whole, 23 inches deep by 4½ inches thick. The framing is constructed in a manner at once peculiar and securing the greatest possible amount of strength. The framing of the ship is very heavy.

The hull is composed of several water-tight compartments, so arranged that if one should by any means be stove, the others will remain intact, and thus the possibility of such a terrible catastrophe as that which happened to the Arctic is rendered impossible. The weight of the iron in the Persia is 2,200 tons. When the engines are on board, and she is fully laden, the weight of the immense mass will be 5,400 tons, at which time she will draw 23 feet of water. Her coal cellars are constructed to receive 1,400 tons of coal. She has accommodation for about 1,200 tons measurement of goods. Steam is the grand agent, and accordingly the Persia is only lightly rigged with three masts. Hitherto the largest steamer belonging to the Cunard Company is the Asia, but she is only 2,393 tons.

Collins far surpassed the Cunarders when he established the American line, but father John, over the water. was not to be thus outdone by his ambitious young son; and therefore, in the construction of the Persia, he has taken another stride onward with his seven leagued boots. We shall expect to hear from Jonathan again ere long. This peaceful and honorable rivalry between nations is one of the most powerful incentives to improvement. If the *Collins* steamers had never been built, the original Cunarders would have been the ultimatum of steam naval architecture.

Loss of Life in the Crimea.—The Paris Presse quotes Lord Grey's estimates of the loss of life, putting it at 500,000 men in all— 250 000 on the side of the Russains, and 250.000 on the side of the Allies It then gives the Turkish loss at 120,002. leaving, by a very simple process of subtraction, 130,000 for England and France. 50,000 for the former, add 80,000 for the latter, are the conclusions of this estimate of human slaughter.

Men of great genius, but little heart, are they not like the aurora borealis, whose magnificence awes the arctic voyager to silence? But for what are they good? With all their splendor they cause no flower to bloom; in all their light there is no life.

HONEY BEES.

From an interesting article on honey bees, from the pen of a distinguished professor, we quote the following paragraph: 'Many—nearly everybody—suppose that the bee culls honey from the nectar of the flowers, and simply carries it to its cell in the hive. This is not correct. The nectar it collects from the flower is a portion of its food or drink; the honey it deposits in its cell is a secretion from its mellific or honey secreting glands, (analogus to the milk-secreting gland of the cow and other animals.) If they were the mere collectors and transporters of honey from the flowers to the honey comb, then we would have the comb frequently filled with molasses, and whenever the bees have fed at the molasses hogshead. The honey bag in the bee performs the same functions as the cow's bag or udder, merely receiving the honey rom the secreting glands, and retaining it until a proper opportunity presents for its being deposited in its appropriate storehouse, the honey-comb. Another error is, that the bee collects pollen from the flowers accidentally, while it is in search of honey. Quite the contrary is the fact. The bee, while in search of nectar, or honey, as it is improperly called, does not collect pollen. It goes in search of pollen specially, and also for nectar. When the pollen of the flower is ripe, and fit for the use of the bee, there is no nectar; when there is nectar, there is no pollen fit for its use in the flower. It is generally supposed, also, that the bee collects the wax from which it constructs its comb from some vegetable substance. This is also an error. The wax is a *secretion* from its body, as the honey is; and it makes its appearance in small scales or flakes, or under the rings of the belly, and is taken thence by other bees, rendered plastic by mixture with the saliva of the bees' mouths, and laid on the walls of the cell with the tongue, very much in the way a plasterer uses a trowel."

Milk for the Parisians.—A most rigid surveillance is being now kept up not only in Paris and the Banlieue, but in all parts of the country from whence the capital is supplied, over the milk which is forwarded for the consumption of its inhabitants. Thirteen farmers have just been condemned to fines of 100f. and under and one to eight days' imprisonment for sending milk mixed with water. The milk undergoes a rigorous examination at the railway stations, and also at the shops of the retail dealers.

A Hint.—Many large limbs have fallen from the trees in the woodlot. If you have a spare day before snow falls to cover them, go through your lots and pick up what is worth saving, and which if left till covered with snow would be lost. If you cannot do it yourself, invite your poor neighbor to do it for himself. Better it made his family comfortable in the cold winter approaching, than that it rotted on your land.

A Geologist Nonplussed.—An old bachelor geologist was boasting that every rock was as familiar to him as the alphabet. A lady present declared she knew of one of which he was wholly ignorant. "name it, madam," cried Cœlebs, in a rage. "It is rock the cradle, sir," replied the lady *Cœlebs evaporated.*

Hermetically Sealed.—We often find this expression used to indicate an air-tight stuffing box; but it should never be employed except for expressing a closed joint made by melting the material of which the joint is composed, such as a glass tube being melted and then closed.—[Scientific American.

Sit Upright.—"Sit upright! sit upright, my son!" said a lady to her son George, who had formed a wretched habit of bending whenever he sat down to read. His mother told him that he could not breathe rightly unless he sat upright. But it was no use; bend over he would in spite of all his mother could say. "Sit upright, Master George!" cried his teacher, as George bent over his copy-book at school. "If you don't sit upright like, Master Charles, you will ruin your health, and possibly die of consumption." This startled Master George: He did not want to die, and he felt alarmed. So after school, he said to his teacher, "Please, sir, explain to me how bending over when I sit, can cause me to have the consumption?"

"That I will, George," replied his teacher, with a cordial smile. "There is an element in the air called oxygen, which is necessary to make your blood circulate, and to help it purify itself by throwing off what is called its carbon. When you stoop you cannot take a sufficient quantity of air to accomplish these purposes; hence the blood remains bad, and the air cells in your lungs become irritated. Presently the lungs inflame. The cough comes on. Next, the lungs ulcerate, and then you die. Give the lungs room to inspire plenty of fresh air, and you will not be injured by study. Do you understand the matter now, George?"

"I think I do, sir; and I will try to sit upright hereafter," said George. He was right in this resolution. Will all the boys and girls who read my magazine imitate him? They will, I know, if they wish to live healthy lives. Make it your motto, therefore my little reader, to sit upright, whether you sit to eat, to sew, to read, or to converse. Now don't forget it. You must sit upright.—*Forrester's Magazine.*

Future Housekeepers.—We sometimes catch ourselves wondering how many of the young women we meet with, are to perform the part of housekeepers when the young men who eye them so admiringly have persuaded them to become their wives. We listen to those young ladies of whom we speak, and hear them not only acknowledgeding but boasting of their ignorance of all household dutics, as if nothing would so lower them in the esteem of their friends as the confession of an ability to bake bread and pies, or cook a piece of meat, or a disposition to engage in any useful employment. Speaking from our youthful recollection, we are free to say that taper fingers, and lilly white hands are very pretty to look at with a young man's eyes, and we have known the artless innocence of practical knowledge displaved by a young Miss to appear rather interesting than otherwise. But we have lived long enough to learn that life is full of rugged experiences, that the most loving, romantic and delicate people must live on cooked or otherwise prepared food, and in homes kept clean and tidy by industrious hands. And for all the practical purposes of married life, it is generally found that for the husband to sit and gaze at a wife's taper fingers, or for a wife to be looked at and admired, does not make the pot boil or put the smallest piece of food in the pot.

Warts.—The oil from the outside shell of walnuts or butternuts will cure warts by a few applications.

INFORMATION RELATING TO STEAM ENGINES.—We oftentimes receive letters from correspondents requesting us to tell them the horse-power of their engines; this we can easily do when the diameter of piston, the pressure of steam, and the velocity of piston are given; but unless this is done we cannot give the the required answer. To such enquirers the following would be useful information:—The unit of a "horse power" is 32,000 lbs lifted one foot in a minute. To calculate the horse power of any engine, multiply the area of piston in square inches by the pressure of steam in pounds on the spuare inch, and by the velocity of the piston and divide the product by 33,000; the result is the nominal horse-power of the engine. It is the common practice, however, to deduct the fourth of this as being expended on the engine itself, that is absorbed by friction, and not given out to the machinery which the engine may be driving. For this reason some engineers use the divisor 44,000 in estimating the horse power of their engines. This is the case with the Clyde engineers, (the builders of the Cunard steamers,) the engines of which are rated lower than the American ones of the same power.—*Scientific American.*

THE BASIN OF THE ATLANTIC OCEAN.—The basin of the Alantic Ocean is a long trough, separating the Old World from the New, and extending probably from pole to pole This ocean furrow was probably scored into the solid crust of our planet by the Almighty hand, there the waters which he called seas might be gathered together so as to let the dry land appear and fit the earth for the habitation of man. From the top of Chimborazo to the bottom of the Atlantic at the deepest place yet reached by plummet in the Northern Atlantic the distance in a vertical line is nine miles. Could the waters of the Atlantic be drawn off so as to expose to view this great sea-gash, which separates continents and extends from the Arctic to the Antartic, it would present a scene the most rugged, grand and imposing. The very ribs of the solid earth, with the foundations of the sea, would be brought to light, and we should have presented to use at one view in the empty cradle of the ocean, "a thousand fearful wrecks," with that dreadful array of dead men's skulls, great anchors, heaps of pearl and inestimable stones, which in the poet's eye, lie scattered in the bottom of the sea, making it hideous with sights of ugly death. The deepest part of the North Atlantic is probably somewhere between the Bermudas and the Grand Banks The waters of the Gulf of Mexico are held in a basin about a mile deep in the deepest part. There is at the bottom of the sea between Cape Race, in Newfoundland, and Cape Clear, in Ireland, a remarkable steppe, which is already known as the telegraphic plateau. A company is now engaged with the project of a submarine telegraph across the Atlantic. It is proposed to carry the wires along this plateau from the eastern shores of Newfoundland to the western shores of Ireland. The great circle distance between these two shore lines is 1600 miles, and the sea along this route is probably nowhere more than 10,000 feet deep.—[Prof. Maury.

HOW TO HAVE NO WEEDS TO PULL.—Stir the ground often and they will never get big enough to pull. A loose top soil can be stirred up a half dozen times with a hoe in the time required to go over it once in the pulling process. The growth of all plants will also be greatly promoted by frequent stirring of the soil.

PRESERVATION OF MILK.—The following method is recommended for the preservation of milk, either at sea or in warm climates:—"Provide pint or quart bottles, which must be perfectly clean, sweet, and dry; draw the milk from the cow into the bottles, and as they are filled, immediately cork them well up, and fasten the corks with packthread or wire; then spread a little straw on the bottom of a boiler, on which place the bottles with straw between them, until the boiler contains a sufficient quantity. Fill it up with cold water; heat the water, and, as soon as it begins to boil, draw the fire, and let the water cool gradually When quite cold, take the bottles and pack them with straw or sawdust in hampers, and stow them in the coolest part of the ship, or in a cool place. Some years since there was a Swedish or Danish vessel at Liverpool, having milk on board, preserved in this manner. It had been carried twice to the West Indies, and back to Denmark, and been above 18 months in the bottles; nevertheless, it was as sweet as when first taken from the cow."—*New Monthly Magazine.*—On this subject the Editor of the *Chemist*, in the May number remarks, "We lately tasted, at the Royal Institution, Milk preserved by M. Mabbru's process and which had been presented by the Abbe Moigno to Mr. Barlow, who alluded to it in his lecture on preserved meats and vegetables. This milk was one year old, and was as sweet as when first drawn; a considerable quantity of cream had collected in the neck of the bottles."

RULES FOR THE PRESERVATION OF SIGHT.—The eye should never view an intense light. The light of a flame should never fall upon any part of the eye during use. Bodies of all colours should be equally viewed, and, after regarding a bright or primary colour, repose should be sought by looking at a tertiary colour. An unsteady flame is hurtful during reading or writing. The eye is liable to damage from being employed on black objects by artificial light, because it is insufficient for the purpose The observation of objects at the reflecting angle, is hurtful, from the intensity of the light. All coverings to lights are injurious, as the clearness of the flame is diminished; and ground glass shades are particularly detriment l Reading during railway travelling is hurtful, because of the constant unsteady motion which is imparted to the book. The observation of close objects during rapid locomotion is trying and detrimental to vision. Glasses of neutral tint, blue or green colour, may be employed to protect the eyes from a bright sun in the middle of the day; but they are injurious when the light is not painfully intense. Rapid transitions from darkness to intense light is liable to be followed by blindness.—*Smee on the Eye.*

GENTEEL PROFESSIONS.—Now-a days, parents entertain a silly notion that their children must be instructed in a genteel profession; they repudiate the "vulgar" notion of bringing a boy up as a carpenter, cabinet maker, shipwright, or in fact any occupation that involves labor. He must be educated for the church, the bar, the law or for the post of civil engineer—hence those professions are overrun, and hundreds, nay, thousands of young men are a burthen upon their families, being unable to find anything to do. Copyists, as a class, are badly paid for their service; but as theirs is a mechanical occupation requiring little exercise of the mind it cannot reasonably be expected that they should receive the wages of a carpenter or any other skilful mechanic. Genteel professions, in a few years, will not be sought after by fathers and mothers for their sons, as a good investment for the capital expended upon their education.

How Females should act in a Critical Case.—When the clothes of females take fire, as the fire generally begins at the lower parts of their dress, so long as they continue in an upright posture, the flames, naturally ascending, and meeting with additional fuel as they rise, become more powerful in proportion, whereby the neck, head, and other vital parts of the body are liable to be much injured; and by running from one part of the room to another, or from one apartment to another, as is most frequently the case, the air, which is the fuel of fire, gains free access to every part of their apparel, and feeds the increasing flame. In such cases, the sufferer should instantly throw her clothes over her head, and roll or lie upon them, in order to prevent the ascent of flames and fresh air. When this cannot conveniently be effected, she may still avoid great agony, and save her life, by throwing herself at full length on the floor and rolling herself thereon. Though this method may not in every case completely extinguish the flame, it will, to a certainty, retard its progress, and prevent fatal injury to the vital parts. When assistance is at hand, the bystanders should immediately wrap a carpet, a hearth-rug, a great-coat, or a blanket around the head and body of the sufferer, who should be laid in a recumbent position, which will prove a certain preventive from danger.

Worth Knowing.—One pound of green copperas (cost seven cents) dissolved in one quart of water and poured down a privy, will effectually concentrate and destroy the foulest smells. For water-closets on board ships and steamboats, about hotels and other places, there is nothing so nice to cleanse and purify those places, as simple green copperas, dissolved; and for sick rooms, it may be placed under the bed in any thing which will hold water, and thus render a hospital or other places of the sick free from unpleasant smells. For butchers' stalls, fish-markets, slaughter-houses, sinks, and wherever there are putrid and offensive gases, dissolve copperas and sprinkle it about, and in a few days the "bad smell" will pass away. If a cat, rat, or mouse dies about the house and sends forth an offensive gas, place some dissolved copperas in a cup or jar, anywhere within "smelling distance," and the cure is sure. I have known a stock of dry goods which were nearly spoiled by a "skunk" under a store, to be cleaned and restored simply by sprinkling dissolved copperas about the floor.—*Salem Gazette.*

How to move a Sullen ox.—"Did you never observe," said a plain man, a friend of ours, a few days since, as we were driving a dog out of the cow-pen, to prevent his taking refuge behind us—as the cows took it by turns to chase him over the lot—"did you never observe that a cow never will make friends with a dog?" "Often." "Well, the best way you ever tried to make steers rise when they get sullen, and lie down is just to bring a dog and drop him down on them. It will make them jump up when nothing else in the world will." We seized the hint at once for the benefit of our friends who own such pests as obstinate ox en, and give it them now. We believe there is no antipathy so universal and invetrate as that of cattle against dogs, and it strikes us that when all other means fail, that will answer.—*Southern Planter.*

Cure for Wasp Stings.—Some unfortunate, last year, while picking peaches, was stung in the finger by a yellow wasp. The wound caused effusion of blood, and inflamed the arm to the shoulder. Saleratus, made into a *paste* with water, was soon applied as a poultice, and in half an hour had so completely neutralized the acid poison, that the swelling had entirely gone down, and nothing remained but the soreness occasioned by the puncture. This application has proved better than liquid ammonia, so far as a limited trial has proved, and is probably the best remedy for stings generally. It is important that the nearest alkaline substance at hand should be applied till a better can be found, whether it be ammonia or even paste of fresh ashes. In the absence of all these, a mud poultice is an excellent remedy.—*Buffalo Democracy.*

Avoid Rashness in Swimming.—In youth every person should learn to swim, as a part of his or her education, as in many emergencies it may be the means of saving life. But we must caution good swimmers against being too rash in exposing themselves to needless danger. Many excellent swimmers have been drowned in overweening confidence in their aquatic qualities, and not a season passes away without some instance of this kind taking place. An old sailor told us once, that in his experience, he never saw a smart man who was fond of displaying feats of agility, and risking his life needlessly, but lost it foolishly. The case of Sam Patch is one of this kind. In cases of danger it is a sublime sight to see a man risk his life to save that of another, but it is worse than vanity or a man to risk his life when no good object is to be subserved by doing so.

Resources and Destiny of Turkey.—Our consul represents the resources of Turkey at Euren-keuy, both in vegetable and mineral productions, as inexhaustable. He can get Turkish labourers for three pounds a-year wages besides their keep; but we find it more profitable to employ Greeks at ten pounds a year. This is the present history of the two races. He thinks, very decidedly, that it is the best thing for the Christian races themselves to preserve the existing state of things for the present, till their growth has secured its own results. A Turk himself had told him the other day that it was becoming inevitable that gradually all the chief employments and the army itself must be recruited from the Christian population; and then, some day, the Ministers would tell the Sultan that he must become a Christian, and he would do so. Will it, then, be a convert or a conqueror, a Constantine or a Ferdinand, who will be in St. Sophia?—*Earl of Carlisle's Diary in Turkish and Greek Waters.*

Heat without Fuel.—The problem of acquiring heat without fuel appears to have been solved by the invention of the machine of M M. Beaumont and Mayer, with which, by means of fricton alone, they can make water boil. The machine, which may be seen at work at their establishment on the Quai Valmy, contains 400 litres of water, which is made to boil in two hours. A cone of wood, which turns on a cylinder so as to produce the necessary friction, is covered with tow, in order that it may not catch fire is kept constantly moistened by a stream of oil which runs on it. The heat gradually increases, until at last steam is generated.—*Galignani.*

A NEW PRESERVE.—A correspondent sends us the following:—"I have lately been very busy making a new kind of preserve, which, I may say, is quite a discovery, to me at least, and which promises to insure me a plentiful supply of good, wholesome jam for my family during the winter, at a price below the usual cost of preserves. I was, the other day, making some ordinary apple jam, and before finishing it, I put in some blackberry juice, in order to give it a little colour, and I was surprised at finding how much the preserve was improved by the addition; so much so, that it might be mistaken for damson jam. As you will see by the following proportions, the cost must be very small, wherever apples and blackberries are to be got. I put two quarts of the juice of blackberries—that is, I bring the berries up to a simmer for five minutes, and then strain them through a coarse cloth—and about six pounds weight of cut-up apples, and one pound of crushed lump sugar, and stew it up in a usual way, till the apples are softened down, and the mass becomes of the usual thickness. It is wholesome and good, and I thought that what was within any one's reach ought to be known.—*Godey's Lady's Book.*

SUMMER SNOWBALLS.—Simmer half a pound of rice until it is tender, then strain it. Take five or six apples, of middling size, pare them and take out the core with a small knife or apple scoop, but do not cut them into sections. Into the hollow made by cutting out the core, put sugar and a little allspice. Divide the rice into a portion for each apple, and tie them separately in a small cloth, and boil an hour These dumplings, or snowballs, may be served with sweet sauce, or eaten with simple sugar or treacle.

RECIPE FOR TOMATO FIGS.—Pour boiling water over the tomatoes, in order to remove the skin, then weigh them, and place in a stone jar with the same amount of sugar as tomatoes. Let them stand two days, and then pour off the syrup, and boil and skim it until no scum rises; pour this syrup over the tomatoes and let them stand two days as before; then boil and skim again; after the third time they are fit to dry. if the weather is good. if not let them stand in the syrup until drying weather; then place on large earthern dishes or plates, and put them in the sun to dry, which will take about a week; after which pack them down in small wooden boxes, with fine white sugar between each layer. Tomatoes prepared in this way will keep for years A few apples cut and boiled in the remainder of the syrup, makes a very nice sauce.—*Prairie Farmer.*

RIPE TOMATO PICKLES.—Select handsome sized tomatoes, wash them and prick them with a fork. lay them in dry salt 24 hours, then soak them in equal quantities of vinegar and water 24 hours; take them out and lay them down in a crock with sliced onions, first a layer of tomatoes, then onions, with cinnamon cloves and brown sugar, and then cover the whole with cider vinegar.

PASTE THAT IS PASTE.—Dissolve an ounce of alum in a quart of warm water; when cold, add as much flour as will make it the consistence of cream. then stew into it as much rosin as will stand on a shilling. and two or three cloves; boil it to a consistence, stirring all the time. It will keep for twelve months, and when dry, may be softened with water

DRIED APPLE PIES.—Wash the apples in two or three waters, and put them to soak in rather more water than will cover them, as they absorb a great deal. After soaking an hour or two, put them into a preserving kettle with the same water, and with the peel of one or two lemons, chopped fine. Boil tender; when they rise, press them down, but do not stir them. When tender, add sugar, and boil fifteen or twenty minutes longer. Dried apples, soaked over night, are made tasteless, and are mashed up by being stirred. When cooked, stir in butter, nutmeg or cloves.

TO MAKE FINE PAN-CAKES, FRIED WITHOUT BUTTER OR LARD.—Take a pint of cream and six new-laid eggs; beat them well together; put in a quarter of a pound of sugar and one nutmeg or a little beaten mace—which you please, and as much flour as thicken—almost as much as ordinary pan-cake flour batter; your pan must be heated reasonably hot, and wiped with a clean cloth; this done, spread your batter thin over it, and fry.

BEST BREAD.—The best bread is that made of *unbolted wheat flour.* In some cases a small portion of white bread may be desirable, but the brown after a short time, will be found more palatable, and conducive to a more regular and healthy condition of the system. It has been ascertained that even dogs cannot live over fifty days if fed upon the fine flour bread and water; when fed upon such as contained the whole or a large portion of the bran they are found in no respect to suffer.—*Water Cure Journal.*

BEE STING AND TOOTH ACHE.—The pain of bee sting may at once be relieved. and the subsequent swelling prevented, by wetting the part with spirits of harts horn (water of ammonia) The sting is hollow. and there is a little drop of poison at its root that is driven through it by the pressure of its insertion, and deposited in the wound. The poison is said to be of an acid nature, and to be destroyed by this volatile alkali. The pain of tooth ache, also, is relieved oftener by a few drops of hartshorn on a bit of lint inserted in the cavity of the tooth, than by any other application. Keep a viol of it well corked, in the house, and if you are fortunate enough to need it for nothing else, use it to restore the color destroyed by fruit stains

WHERE TO GET TALLOW.—Besides the bear, the beaver, the martin, and other creatures, whose furs alone are sought for, there are vast hordes of horned cattle subsisting on the open grass lands and wooded dells of the great central plains. lying between the base of the rocky mountains and the border of the forests that skirt Hudson's Bay. These creatures have been seen, not in hundreds, but in tens of thousands, wild and in fine condition. Their flesh has been tasted by travellers and reported to be excellent food. Tens of thousands of these wild herds perish yearly on Rupert's Land; and, by the simplest commercial arrangements, they might be made to yield tallow, hides. and horns for the benefit of this country.—*Dicken's Household Words.*

THE HUMAN FAMILY.—The ties of family and of country were never intended to circumscribe the soul. Man is connected at birth with a few beings, that the spirit of humanity may be called by their tenderness; and whenever domestic or national attachments become exclusive engrossing, or clannish, so as to shut out the general claims of the human race, the highest ends of Providence is frustated, and instead of being the nursery, becomes the grave of the heart.

An Unfortunate Rooster.—There are objections to Shanghais, no doubt, but we had never thought of this. It is very curious but it is true. The way of it was this: Mr. S——, an old resident of Stillwater, on the upper Hudson, introduced among his family of hens a few Shanghais, including a rooster, of formidable dimensions, who had "run to legs" a good deal. His crow was peculiar and easily distinguished from that of other cocks. One morning he had waited to hear a repetition of the usual summons, after being aroused by the "shrill clarion" once sounded, but he heard it not again. The other roosters were doing their best, but the pre-eminent chanticleer was still. Mr S—— went out to see what had caused the silence. He found the rooster lying on his back, with both legs out of joint. After an examination, he set both legs; the cock walked off, and gave vent to his satisfaction in a lusty crow. In the very act he dropped as if he had been shot. He had crowed his legs out of joint again! He was kept three or four days, and then killed. "It was oo much trouble," said Mr. S. "to set him up every ime he crowed!"—*Knickerbocker Mag.*

A Horse Charmer.—On the voyage to England the *Simla* experienced some heavy weather in the Bay of Biscay, in which the horses suffered severely, and some, including a charger of General Scarlett, became unmanageable. A valuable mare was so bad that a pistol was got ready to shoot her to end her misery, when a Russian officer recommend a Cossack prisoner to be sent for, as he was a "juggler," and could, by charms, cure any malady in a horse He was sent for, and immediately said he could cure it at once. He was closely watched, but the only thing they could observe him to do was to take his sash off, and tie a knot in it three several times However, the mare in a few minutes got on her feet and began to eat heartily, and rapidly recovered.

How to Determine the Capacity of Cisterns.—Square the diameter in feet, multiply by the decimal .7854; multiply this product by the depth in feet of the cistern—this will give the number of cubic feet of water it is capable of containing. Multiply by 1828, and you have the cubic inches, which divide by 231, the number of cubic inches in a gallon, and the result will be the number of gallons. Suppose the diameter of a circular cistern be 10 feet, the square of this is 100; multiply it by the decimal .7854, which will give 78.54 ft., which multiplied by the depth of the cistern, 12 feet, gives 942.48 cubic feet as the whole contents, which of course may be brought into gallons by the rule above given.

Origin of the Honeymoon.—There is the honeymoon now, was there ever such a silly word as that? Minister said, the Dutch at New Amsterdam, as they used to call New York, brought out the word to America, for all the friends of the new married couple in Holland did nothing for a whole month, but smoke, drink metheglin (a tipple made of honey and gin), and they call that bender the honeymoon; since then the word has remained, though metheglin is forgotten for something better.—*Sam Slick's Nature and Human Nature.*

A means of impregnating silk with gold, silver, brass or iron, so that it can be woven with perfect flexibility, has recently been discovered by a chemmist in France.

Mr. Greeley, in his letters from Europe, says the silk manufacturers of France were never more busy or more prosperous than at the present time.

In London there are fifty "King" streets, fifty "Queen" streets, and sixty "John" streets.

Repeated Meltings of Cast Iron.—From careful experiments made by William Fairbrain, of Manchester, it was ascertained that the strength of iron increased with each successive melting, up to the twelfth or thirteenth trial, after which it diminished in strength. One ton of hotblast iron was experimented upon, and the quantities of coal and flux noted at each trial. Care was taken that the cooling and mode of pouring should be in each case alike, so as not to affect the result. The iron was run into bars of one inch square, and lengths of seven feet, were supported at each end and weights applied until the bar broke. The breaking weight at the commencement was 403 lbs.; at the 12th melting, 672 lbs.; at the 13th, 671 lbs.; at the 15th, 391 lbs.; at the 16th, 363 lbs.; and at the 17th melting, 330 lbs. In the fracture made after the 15th melting, there was a bright rim, like silver, surrounding the interior, which was of the usual crystaline structure This silvery fracture extended in the 16th and 17th specimens, until it pervaded the mass, which then resembled cast steel.

Endless Railway.—For some time past Boydell and Glasier's patent wheels have been undergoing the severest of experiment at Woolwich, and in every case with the greatest success. Also in the early part of Christmas week the above firm had the honour of experimenting with a horse and cart furnished with their wheels in Windsor Park before His Royal Highness Prince Albert, with equally satisfactory results. These trials having reference to military rather than agricultural affairs, we conceive it would be highly injudicious to enter upon the details of what we saw at Woolwich in the present exigencies of the country; suffice it to say, that the problem of an endless railway, at the slow pace of farm horses, has been practically solved. No landlord now need any longer complain of having his woods, ridings, park, and pleasure-grounds cut up, and teams destroyed, in the drawing of timber, or any thing.—*Mark Lane Express.*

Inn Signs.—The Bell was formerly the usual prize at races. A small gold bell was the prize at York races in 1807; and a bell was one of the prizes at Chester races down to the last century. "To bear away the bell" would then be synonymous "with wining the cup," in more modern times The Flowerpot was originally the lily vase, represented by the side of the angel Gabriel, in mediæval pictures of the Salutation of the Virgin. The Three Crowns were emblematical of the three kingdoms of England, Scotland, and Ireland. The "Three Balls" of the pawnbrokers were the arms of the Lombards who came from Italy, settled in Lombard street, and were the first money lenders or pawnbrokers—their trading sign being three bezants or Byzantine gold coins in currency about the time of the Crusades. Our modern pawnbrokers have taken these three obsolete gold coins, as painted on the plane surface, to be golden balls.—*Beaufoy.*

Youthful Neglect.—Walter Scott, in a narrative of his personal history, gives the following caution to youth:—"If it should ever fall to the lot of youth to peruse these pages, let such readers remember that it is with the deepest regret that I recollect in my manhood the opportunities of learning which I neglected in my youth; that through every part of my literary career I have felt pinched and hampered by my own ignorance; and I would at this moment give half the reputation I have had the good fortune to acquire, if by doing so, I could rest the remaining part upon a sound foundation of learning and science."

FEMALE WOMEN.—We respect admire and love a female woman. We admire her in the beauty of her person, her moral presence and position; and we respect her simple truthfulness and innocence, and we love her as the embodiment of the highest charms and sweetest attributes of humanity. But a male woman who can bear! We cannot read of monster meetings in which women perform the leading parts; of lectures on the subject of marriage to promiscuous audiences by female tongues, and of the perambulating female spouters, who go about the country, without an involuntary feeling of disgust. Many of these women are mothers who have families of tender age at home, and husbands who should have tender heads. Home duties forsaken, and the misguided mistresses go about teaching other people *their* duties! What comfortable wives they must be! What kind and assiduous mothers! How they must hallow a home that is too small to hold them! Gods of War! We would as soon live with a hyena or a steam engine. Don't come this way, we beg of you.—*Springfield Republican.*

"SEEING THE LIONS."—Formerly there was a menagerie in the Tower of London, in which lions were kept; it was discontinued about 40 years ago. During these times of comparative simplicity, when a stranger visited the metropolis for the first time, it was usual to take him to the Tower and show him the lions as one of the chief sights; and in the stranger's return to the country, it was usual to ask him whether he had seen the lions. Now-a days, when a Londoner visits the country for the first time he is taken by his friends to see the most remarkable objects of the place, which by analogy are called "the lions." One constantly hears the expression "we have been lionising," or "seeing the lions;" but thousands who make use of it are ignorant of its origin. It originated as above.—*Notes and Queries.*

SEVEN FOOLS.—The angry man—who sets his own house on fire, in order that he may burn his neighbor's. The envious man—who cannot enjoy life because others do. The robber—who, for the consideration of a few dollars, gives the world liberty to hang him. The hypochondriac—whose highest happiness consists in rendering himself miserable. The jealous man—who poisons his own banquet and then eats of it. The miser—who starves himself to death in order that his heir may feast. The slanderer—who tells tales for the sake of giving his enemy an opportunity of proving him a liar.

COST OF IGNORANCE.—Ignorance pays such a tax that we cannot imagine how anybody can afford to be a blockhead. Mr. Cracken works for a dollar a day, while Spring, his neighbor, commands twenty shillings. A wide difference, and all caused by Spring's knowing how to read, write and cipher.—From these figures it will be seen that McCracken's want of knowledge costs him $400 a year, more than his wife and children, house rent $120, inclusive. Who needs to be saddled with such a loss?

THE ART OF LEARNING.—"The chief art of learning" says Locke, "is to attempt but little at a time. The widest excursions of the mind are made by short flights, frequently repeated; the most lofty fabrics of science are formed by the continued accumulations of single propositions"

EARLY TEACHING.—Scratch the green rind of a sapling, or wantonly twist it in the soil, and a scarred or crooked oak will tell of the act for centuries to come. How forcibly does this figure teach the necessity of giving right tendencies to the minds and hearts of the young!

HORSE TAILS.—The tail of the horse is considered an emblem of dignity in Turkey, from the fact that a Turkish army once lost its standard in battle, when the leader, to inspire the drooping courage of his men, cut off the tail of a horse, hoisted it on the head of a spear, and rallied his force to victory. As a reward he received military promotion, the emblem of which was a horse's tail. The rank of the owner is known by the number of tails he is allowed, the highest being three, and the officers are called "pashas of three tails"

ROOTS OF TREES IN PIPE DRAINS.—Where drains have to be laid near the roots of trees, it is important that they should be well bedded in cement, at those places, and every small opening effectually closed. Wherever the water can get in the roots will also find their way, and eventually cause much trouble in the stoppage of the drain.

Editorial Notices.

PROVINCIAL EXHIBITION.

We learn that the preparations for this great annual gathering, which is to come off at Cobourg, on the 9th, 10th, 11th, and 12th of next month, are in a state of great forwardness, and everything promises, if the weather proves favourable, a successful result. It is confidently expected that every department of our native industry will be liberally represented at the approaching show. The people of Cobourg and neighbouring towns and districts, are making every preparation for accommodating the visitors, who will, doubtless, flock in vast numbers to the scene of action.

Parties intending exhibiting are reminded that entries are required to be made on PRINTED FORMS, *which have been supplied in blank to the Secretaries of Agricultural Societies; which forms must be filled in and signed, and sent to the Secretary of the Association, at the Office of the Board of Agriculture, Toronto,* NOT LATER THAN THE 22nd SEPTEMBER, *after which time a charge of* $1 *will be imposed on each article.* The only exceptions to this rule are Horticulture, Foreign and Indian Products, and Ladies' work—entries of which will be taken up to Tuesday evening, the 9th October; but it is most desirable that persons intending to compete in these classes should enter their articles at the very earliest practicable opportunity, *and they must do so on printed forms.*

If parties should experience any difficulty in procuring the blank forms, they had better write at once to the Secretary, in Toronto, who will immediately forward them by post.

Horses and Cattle intended to compete in the Classes of Pure Breeds, *must have full and satisfactory pedigrees accompanying them.—B.*

CANADA AT THE PARIS EXHIBITION.

We had intended to give in this number a condensed account of the Canadian Department, and the prizes won at the Paris Exhibition; but we found the statements of correspondents so obviously incorrect, and unintelligible; and as the prizes are not yet officially declared; we concluded to postpone the subject until our next issue.

The Canadian Plough is said to have done well; and will take the second prize—Howard's English Plough taking the first. In the Geological department Canada takes a gold medal—a prize of the first class. Canada has also, if we may credit the statements of correspondents, taken the first prize for wheat. The sample was grown by Captain Shaw, whose farm lies adjacent to this city; and is we learn, Spring Wheat! It exceeded all other samples in weight, being over 65 lbs. to the bushel. The following is given as the result of the weighing test by the correspondent of a Montreal paper:—

		KILOGRAMMES.
1	Grown by Alex. Shaw, Toronto, -	83.920
2	" in Australia, - - -	83.010
3	" " Spain, - - - -	82.300
4	" by Mr. Coffin, in Gaspe, C. E.	82.162
5	" in Greece, - - - -	82.100
6	" " Portugal, - - - -	81.900
7	" " Algeria, - - - -	81.800
8	" by Rev. Mr. Villeneuve, Montreal, - - - -	80.810
9	" " Dr Tache, Rimouski, - -	79.740
10	" " Canada Company's prize, -	77 200

The wheat sent by the Canada Company was poor—weighing less than any other. It is well we were not left to their selection, or we should have stood at the bottom, instead of the top of the list.

The following notice of the Canadian department is from the "official" paper:—

(From the Paris Moniteur, 3rd August.)

Canada figures admirably at the Exhibition, and its products, and its specimen of grains, fruits, flour of all kinds, attract general attention. The care which the Commissioners and delegates from Canada have displayed, has merited the just eulogiums which have been addressed to them several times by Prince Napoleon.

BIRDS AND INSECTS.

Wilson Flagg, in a late number of Hovey's Magazine, makes five classes of insects, and as many of birds, acting as natural checks upon the increase of insects.

The swallows are the natural enemies of the swarming insect, living almost entirely upon them, taking their food upon the wing. The common martin devours great quantities of wasps, beetles and goldsmiths. A single bird will devour five thousand butterflies in a week. The moral of this is, that the husbandman should cultivate the society of swallows and martins about his land and outbuildings.

The sparrow and wrens feed upon the crawling insects that lurk within the buds, foliage and flowers of plants. The wrens are pugnacious, and a little box in a cherry tree will soon be appropriated by them, and they will drive away other birds that feed upon the fruit, a hint that cherry growers should remember in the spring and act upon.

The thrushes, blue-birds, jays and crows prey upon butterflies, grasshoppers, crickets, locusts and the larger beetles. A single family of jays will consume 20 000 of these in a season of three months.

The wood peckers are armed with a stout, long bill, to penetrate the wood of trees, where the borers deposit their larvæ. They live almost entirely upon these worms.

TORONTO NURSERIES.

THE Subscriber respectfully invites Gent'emen and Farmers about to plant trees this Fall to visit the Nurseries and examine for themselves. The stock of Fruit and Ornamental Trees, &c., &c., offered this Fall and next Spring is the largest and finest ever offered by one establishment in this country. The trees are large, healthy, and well rooted. Farmers would do well to order their trees DIRECT FROM THIS NURSERY, instead of buying from pedlars, or bring their teams to the Nursery, and choose their own trees. In this way they need not lose a tree in a hundred. Printed directions for planting will be given to purchasers along with their trees. Parties commencing the Nursery business, supplied with specimen Trees and Fruit-tree-Stocks of all kinds and parties wishing to sell again supplied at wholesale prices. Wholesale and Retail Catalogues will be sent on application.

The Subscriber would like to appoint a respectable man as Local Agent in every Township in the Province, one who would be responsible to the people in getting a good article. Assessors and Collectors of Townships would be proper parties to undertake this business. Commission to them for their trouble will be very liberal. Packing done in the best manner, so as to ensure the safety of the Trees and Plants to the most distant parts of the Province.

All letters and business communications will be promptly attended to, address POST PAID to

GEO. LESLIE.
Toronto Nurseries.

Toronto, August, 1855. 9-2t

TO BE SOLD,

The Property of the East Zorra Agricultural Society:

A Fine Agricultural Stallion

16 hands high, dark dappled bay with black mane, tail, and legs by Old Clyde, out of a Cleveland mare. He is five years old this month, and has taken 6 first and 1 second prizes at different Shows. For particulars apply to the Secretary of the East Zorra Agricultural Society, Woodstock.

Woodstock, July 18th, 1855. 8-3

SUFFOLK PIGS,

(Directly from Imported Stock.)

THE Subscriber offers for sale, a few of these incomparable Pigs, singly, or in properly selected pairs.

PATRICK R. WRIGHT.

CASTLETON FARM,
Cobourg, C.W., July, 1855. 8—tf.

PURE DOWN SHEEP.

JUST Received from England, a fresh supply of the latest improved breeds of SOUTH DOWN SHEEP, of the Hampshire and Sussex breeds, selected with much care and expense, by myson in England, from the best flocks of Dorset's, Hunt's, Mr. Jonas Webb's and the Duke of Richmond's.

JOHN SPENCER.

DORSET FARM, Whitby, July, 1855.

ENGLISH CATTLE
IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,

Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs. BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commission Charged.

Horse,	each,	$30
Bulls or Cows,	"	6)
Ram or Ewe,	"	3)
Three Sheep from the same owner,	each,	2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner,	each,	22
Ten " "	" " "	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses, &c., as follows:

Horse,	each,	$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer provision for 30 days.

Horse,	each,	$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels provision for 60 days

Horse,	each,	$70
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and Col. Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

BREED.	HORSE.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel.	If insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

		$.	$.	
Thorough Bred Horses, from	-	100 to 200	120	
Short Horn or Durham	Bull -	400 " 1500	700	
Do	Cows -	200 " 800	450	
Do	yearling Bull -	200 " 1000	500	
Do	do Heifer -	175 " 400	250	
Herefords	Bull -	300 " 800	500	
Do	Cows -	200 " 600	250	
Devons	Bull -	300 " 800	400	
Do	Cows -	200 " 500	250	
Ayrshire	Bull -	150 " 300	300	
Do	Cows -	150 " 250	200	
Alderney	Bull -	150 " 225	175	
Do	Cows -	100 " 150	125	
		Will weigh when killed and dressed	Will shear of washed wool	
Cotswold Sheep	Ram -	100 to 300	13 lbs	12to15lbs
Do	Ewe -	25 " 100	30	
Leicester Sheep	Ram -	100 " 200	120lbs	10
Do	Ewe -	20 " 80	25	
South Down Sheep	Ram -	150 " 300	112lbs	6 to 9lbs
Do	Ewe -	25 " 100	30	
Hampshire do	Ram -	75 " 125	120lbs	10 6to10lbs
Do	Ewe -	15 " 25	25	
Swine	Boars -	25 " 50	40	
Do	Sows -	15 " 40	25	
Merino Sheep from Spain				
Mules from Spain.				5

GALLOWAY BULLS FOR SALE.

THE Subscriber will offer for sale at the Provincial Exhibition, to be held at Cobourg, 2 PURE BRED BULL CALVES, from imported Cows; also, 4 IMPORTED CHEVIOT RAMS, to be seen at the premises of the subscriber, near Cobourg.

WILLIAM RODDICK.

Cobourg, June, 1855. 7.

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture of Upper Canada, No. 2, Vol 1st, pp 160 Toronto: printed and published by Thompson & Co, for the Board of Agricullure

This work is issued in quarterly parts, four of which will form a volume. The first part embodies the transactions of this Provincial Association from its institution in 1846, down to the commencement of the year 1851 The next number contains an account of the further proceedings of the Association and the Board of Agriculture, Prize Essays, Abstract of County Reports, &c., down to 1843.

The work will be sent free by post for 5s per annum. All communications and remittances to be addressed to the Secretary of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855. 5.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particula before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at Cobourg in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND, *Secretary.*

Office of the Board of Agriculture }
Toronto, March, 1855. }

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision

A man and three boys can turn out from 5, 00 to 10,000 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - - - - - - - - - - - - - - - - - - - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - - - - - - - - - - - - - - - - - - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,

Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturists and Horticulturists, that they have received a large and varied assortment of

FARM AND GARDEN IMPLEMENTS

And would solicit a call from parties about to purchase, at No. 77, corner of Yonge and Adelaide streets, Toronto They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand Reaping and Mowing Machines on the most improved principles, will be for sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second, Bred by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds ; if grade, 5s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (1621 English Herd Book), was sold in 1853 for $4,000.

FREDERICK WM. STONE.

Guelph, April 24, 1855.

COMBINED REAPER AND MOWER.

Manny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught—the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground ; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $130. We are also manufacturing Burall's Reaper, price $120 ; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, May 6, 1855.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture Horticulture Farm Mechanics*, and to the advancement of the *Farmers' interests generally* It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, beside Editoral and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributors to this journal.

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production* and asks no man's support under a false name. It is a true not a spurious *Canada Farmer.*

TERMS

Twenty copies or upwards, each - - - - - 2s. 6d.
Single copy - - - - - - - - - - - - - 5s.

☞ The *Agriculturist* is not liable to *Postage.*

☞ Newspapers inserting the above will do us a favour, and entitle themselves to a copy without exchange.

WM. McDOUGALL,
Publisher, Toronto.

PRINTED AT THE GLOBE OFFICE, 22, KING ST., TORONTO

THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VIII. TORONTO, OCTOBER, 1855. No. 10.

Agriculture, &c.

AGRICULTURE IN GERMANY.

S. W. Johnson, a foreign correspondent of the *Country Gentleman*, writes from Heidelberg, as follows:—

"Heidelberg—Rape, its Culture and Use—Beet Sugar—Prof. Bunsen—Cooking Vegetables.

Heidelberg lies on the Neckar, some miles above the confluence of that river with the Rhine. From the heights above the top, the view northward and westward extends over the fertile Rhine and Neckar valley, and the courses of the two streams may be plainly traced. The vegetation of this and the neighbouring valley, was far more advanced at the date of my visit, April 23, than that of Bavaria and Wirtemburg. The spring field-operations seemed nearly completed and winter crops were well up. My notice was particularly arrested by the winter rape (*Brassica napus-oleifera*). I was astonished to find that while grass had attained at most, a height of three to four inches, this plant was two or even three feet high, and already in blossom. It is chiefly cultivated for the sake of the oil obtained from the seeds, which is one of the most common means of illumination in Germany. The oil has a greenish yellow colour, is free from disagreeable odour, burns clearly, and is greatly preferable to whale oil. The rape cake, or residue after the expression of the oil, constitutes a highly nutritious food, valuable as an addition to coarse fodder, especially for fattening animals. It has a peculiar taste, which is at first disagreeable to cattle, but they shortly get accustomed to it, and learn to relish it. It is then equal in every respect to linseed-oil cake. When there is a deficiency of food in the spring, the green plant is often used as fodder. This plant is said to be of easy cultivation, and appears worthy of extended trial in the United States.

The soil of the Rhine and Neckar valley is good, and the tillage is admirable. One of the chief productions of this country is the sugar beet, from which immense quantities of sugar are annually fabricated.

I have lately observed in our agricultural papers, inquiries concerning the manufacture of beet sugar in the United States, viz., whether it could be carried on profitably there. In your columns, articles have appeared representing the success of the manufacture there as highly problematical. From what I can learn, these opinions are perfectly just. The fact that sugar costs more here than in the United States, and the production here is protected by duties on foreign sugars, sufficiently show the true state of the case.

In Europe field labourers are abundant, and receive but small wages; hence the cultivation of the beet can be carried on very cheaply; besides, all other sources of a supply of sugar are distant. With us the matter is reversed, labour is dear, and the sugar cane is grown profitably in our southern States. The extraction of sugar from the cane is a simpler process than its preparation from the beet; and it is a well ascertained fact that as much sugar is yielded by a crop of beet roots of moderate size and medium weight, as when the roots are of mammoth dimensions. In fact beets are not bought by measure, the price paid diminishes in proportion as the yield exceeds a certain limit. The cane furnishes itself the fuel necessary for the evaporation of the juice, while the beet does not. The farther north the cane is cultivated, the less sugar and the more salts are contained in its sap. The presence of salt diminishes again the quantity of crystalized sugar obtainable from the sap, since, in their presence, the sugar is converted into molasses, during the processes of manufacture. In tropical countries the most beautiful sugar is often obtained directly from the juice of the cane without any purification and without the formation of molasses. To the north, as in Louisiana, the quantity of molasses formed during the manufacture (it does not exist in the fresh juice) is very considerable, except when the most refined methods are employed. Finally, other things being equal, still more loss occurs in making sugar from the beet in colder climates; and

in fact, it is well settled that beets or cane grown on new soil, rich in salts of potash and soda, or upon fields which receive much of these substances in manure, contain less sugar, and yield less of what they do contain in the crystallized form, than when raised on poorer soils. Hot climates are best adapted to the production of sugar from the cane, and doubtless the sugar beet would yield a juice richer in sugar, more free from salts and fermentable matters, and therefore better adapted for the production of this indispensable article, if cultivated further south than has hitherto been the custom. Whether the culture of the two plants might not be combined, is a question to which I invite the attention of our Planters.

It is by no means impossible that a proper combination of enterprise, capital, and Yankee ingenuity under scientific guidance, might establish the beet sugar production on a profitable basis in our western country where lands are cheap; for the processes of manufacture are still very imperfect, and doubtless chemistry, which has been mainly instrumental in bringing the business to its present advancement, can surmount the existing difficulties.

During the last year, an investigation of the influence of various manures and fertilizers upon the sugar beet, was carried out in Heidelberg, with immense labour; and, but for a few circumstances, it would have proved of considerable value. Plots of turnips were treated with weighed quantities of all the fertilizers in common use, and the results were determined by careful weighings and analyses of the produce. Unfortunately the experiments were conducted on too small a scale. Each plot contained but eight turnips, and consequently the tables accompanying the account of the trials are valueless, since a little error of observation, or accident affecting slightly the results on eight turnips, would become very considerable when multiplied by the number of these little plots in an acre; and the results are of no account unless applicable to the quantities actually employed in practice. A repetition of the experiments, with the needful improvements, is promised, and I need not communicate any of the results yet obtained, as they are liable to correction. It is, though, from this kind of researches, faithfully carried out, that progress in the knowledge of the wants and nature of agricultural plants may be expected. They are rather the work of societies than of individuals, and why their importance is not appreciated by any of the numerous agricultural associations of the United States, is hardly to be comprehended. Certainly there is no lack of pecuniary means—it has been thought there is no want of intelligence!

In Heidelberg I met the great chemist, Bunsen, in his newly finished laboratory—the largest and finest in existence, adapted for fifty students. Bunsen has not occupied himself specially with agricultural chemistry; but the influence of his genius and labours is felt in all departments of chemical science, and particularly in chemical analysis. His laboratory is one of the best on the continent for beginners in chemistry, for he devotes great attention to his pupils. Heidelberg is besides a cheap and delightful place of residence.

I conclude with a translation of a note by Prof. Boethger, of Frankfort, "On the Influence of Water in Cooking Vegetables," which I find in an agricultural paper:—

"If one portion of vegetables be boiled in pure (distilled or rain) water, and another in water to which a little salt has been added, a decided difference is perceptible in the taste and odor, and especially in the tenderness of the two portions. Vegetables, boiled in pure water, are vastly inferior in flavour. This inferiority may go far, in case of onions, that they are almost entirely destitute of odour or taste, though when cooked in salted water they possess, in addition to the pleasant salt taste, a peculiar sweetness and a strong aroma. They also contain more soluble matter than when cooked in pure water. Water which contains 1,420 of its weight of common salt, is far better for cooking vegetables, than pure water, because the salt hinders the solution and evaporation of the soluble and flavouring principles of the vegetables. This explains the advantage of the general use of salt in cooking, and the impossibility of correcting, by subsequent additions of solt, the want of flavour in vegetables that have been boiled without it."

WEEDS.

"One year's seeding makes seven year's weeding."

This old proverb conveys an important truth Thoroughly to eradicate plants which one prolific parent will give birth, is a matter of no small trouble or expense. The prolification of some species of of noxious weeds, is almost beyond conception, and when permitted to mature their seeds on soil under cultivation, and well fitted for their support, they are a great evil, and a source of no small trouble and annoyance to the farmer, to say nothing of the injury they inflict upon his crops. It is an excellent plan, therefore to go over the cultivated fields and lands late in autumn, and eradicate every weed that can be found. No matter how small or insignificant may be its appearance, it will assuredly produce seed; and this when disseminated broadcast over the fields by the winds, will germinate, and give birth to a progeny, the perfect eradication of which will take more time and energies of the laborers, than the crops will warrant.

It has been remarked by a moralist that the thistle and mullen are ever the inseparable companions of the sluggard, and it must be confessed that the atmosphere which appears so congenial to the one, appears to possess something in its constitution highly advantageous to the other. Wherever found weeds indicate one of two things:—that the farmer has injudiciously undertaken more than he can accomplish, and do the work well, or they indicate a state of indolence and inactivity.

Some of our agricultural friends are in the habit of gathering up the spurious vegetation of their fields and depositing it in their yards and styes. This is an admirable plan, provided the vegetables have not become mature. In all cases, however, wherever the ripening of the seed has been effected, and the vital principle sufficiently developed to ensure progaga-

tion, the practice can scarcely be attended with other than the worst results.

A very erroneous opinion appears to prevail in relation to the degree of heat engendered by manure while undergoing the process of fermentation; the common presumption being that it is sufficiently intense to ensure the destruction of any seed which may be exposed to the influence of the fermenting mass. This supposition, however, will, upon careful examination, appear wholly unsustained by results. The fermentation which putrescent manure undergoes—unless under very peculiar circumstances—is rarely, if ever, found to rise sufficieutly high to secure this object. The seeds of the common red sorrel—one of the most pestiferous of all weeds in cultivated land, as well as those of the mullen, white weed, and numerous other plants which so annoy us, appear to be in no way injured by the utmost degree of heat that can be produced, without an actual combustion of the heap.

On the contrary many seeds appear to derive an actual advantage from it,—the heat to which they are subjected, inducing a more speedy germination and developement, so that by the time the soil is fit for their reception, of the manure in which they are contained, they are just in the proper condition to take root and vegetate, before those upon which the husbandman bases his expectations of a crop, have had time to swell. Owing to this premature developement, the fields are often stocked with a spurious vegetation, and that which was supposed to be true economy, results in a ruinous waste; the small quantity of manure accruing from the decomposition of the haulm, being purchased at an enormous outlay of labor; and what is still worse, the soil instead of being purged of its noxious weeds is fouler and more prodigally infested than before.Those persons, therefore, who contemplate cleanliness of cultivation, should destroy the weeds that infest the fields before they mature their seeds, This may require care and labor but is not impracticable. But should any escape the hoe, the scythe, or the hand let them be carefully gathered together in some con venient place and burnt.

The thistle, in some districts is the most troublesome weed with which the American farmer is called to contend. Yet we often see it growing in farm yards, gardens by the road side, and even in corners of cultivated fields, in patches sufficiently extensive to ensure the production of seed enough to "stock' an entire township!

This is bad policy. Although the thistle is a "hard customer" and a most impoverishing tenant, it is yet a harder master. When once permitted to usurp the soil, its eradication is attended with much trouble, and its toleration with ruin to the richest soil. It is common now to consider all productions as *weeds*, which is not purposely planted or sowed. The wheat that vegetates in the corn field, and the corn plant that springs up accidentally among the cultivated plants of the garden, is as much a *weed* in the strict acceptation of the term, as the burdock which rears itself in the pasture, or the thistle which fouls the mowing field.

As most species of spurious vegetation are of an indigenous character, they possess, naturally, a hardiness and vigour of constitution which enablds them to subsist and flourish on soils which are poor and thin, and to survive injuries, which no valuable or cultivated plant, not indigenous in the soil, can do. This tenacity of life will suggest the necessity of extra hoeing, and greater care in their eradication than is usually bestowed.

PROPORTION OF BUTTER TO MILK.

The *agitation* of this subject in Britain, in consequence of certain statements made by Mr. Horsfall to the officers of the R. A. Society, if it has not been the means of producing more *butter*, it has brougl t out many statistical facts from various parts of the kingdom. From several communications published in the *Agricultural Gazette*, we make the following synopsis, will be interesting to American dairymen and dairywomen. It should be borne in mind that the wine quart is probably used in every case.

An Irish correspondent gives the result of experiments on a large scale, extending through the year showing the produce of cows for each month. the kind of food used, the quantity of milk given, the quantity of cream taken off, the quantity of butter obtained, the average quantity of new milk and cream required for a pound of butter. From the table given, it appears that in the summer half of the year, it takes 11 qts. and for the winter half 9 qts. 1½ pints; and for the whole year 10 qts. 1 pint of milk for a pound of butter, and 2½ pints of cream to make a pound of butter. The cows averaged for the year 217 lbs. of butter each. The writer says—

"The stock from which the above experiments were taken, where chiefly known as the well-bred Irish cow, and the produce of that animal, if well selected, is I think as good as any. No doubt crosses of the Dutch and Durham produce also good dairy cows; but as far as I have seen, the Durham is much better adapted for the butcher than the dairy. The Ayrshire is also good for the dairy, with a tendency to fatten, and is perhaps better adapted to light soils than any of the other breeds. About twenty miles from this (Cork) I knew a large dairy of Devons; they were a very pretty stock, and gave milk of a rich quality but smaller in quantity than the others. To ascertain the comparative merits of the different breeds on on the same pasture and with the same treatment would be very desirable."

A Dorshester correspondent writes that the average produce of butter per cow in a year, is "about 13 dozen," or 156 lbs,, but that he could mention dairies that have produced "19 dozen or 228 lbs., per cow. One quart of cream makes apound of butter. It is said much "skim-milk" cheese is made. Many of the best dairies are kept on poor land, but if the cows are not kept on too thick, their yield is great and of the best quality.

An extract from a communication of Mr. Littledale, of Liscard Hall, reads as follows:

"I had churned on Saturday from a lot of cows, about three months calved, and all of the large York-

shire breed, fed on Italian Rye-Grass, 42 gallons of milk, produce 19½ lbs. butter; to day 53½ gallons of milk, produce, 22¾ lbs. butter. The produce of butter varies with the breed of cows; in a general way we have found from the large Yorkshire cow it takes 3 gallons for a pound of butter; Ayrshire less; and Alderney still less. At one time I took a great interest in trying experiments upon different cows, and the quantity of butter they would produce; and the most extraordinary yield, which I have never seen equalled since, was from a cow the cross of an Alderney and a Short-horn, after having calved about two months; she gave so rich a milk, that in the lacometer the cream did not separate from the milk; and although a small poor-looking thing, we had 14 lbs. of butter a week from her. We also had a large Yorkshire cow a great milker, and after having calved upwards of three months, she gave us 19½ lbs., of butter in the week; in the lacometer the average of cream for that description of cow was 9, this one's was 18. A cow gives much more butter when she has calved 3 or 4 months, and the quantity of milk is diminished; also a great deal will depend upon the quality of the food. We churn by steam, and last summer we tried the shortest possible time we could do it in; it was a hot day, and we accomplished it in five minutes and a half, the engine making 300 revolutions per minute, and the quantity, 80 gallons of milk; we have also found out in this very hot weather that it pays us well to put American ice into the milk before churning to reduce the temperature to get out more butter; the result of the same quantity of milk without ice, 15 lbs of butter; with ice, 20 lbs.

By a communication from a Suffolk correspondent, it appears that in one week's trial with a large dairy, 12½ quarts of milk were required for a pound of butter.

A Guernsey dairyman writes that he had a pound of butter from 8 quarts of milk, and that he has been assured that 6 quarts has in some cases given that amount. The old Norman pound is here meant, which is equal to 18 English ounces. He thinks the richest milk is obtained when the cow is about six months in calf. He regards 11 quarts of milk to the pound of butter, as about the average. Reckoning wine quarts and 18 ounces to the pound this is a large yield.

Mr. Scott gives a table comprising returns from more than 1000 cows, which shows an average of 1.24 oz. of butter from one quart of milk.

ANOTHER 700 GUINEA SHORT HORN.—Col. Morris and partner, Mr. Becar, have made a recent importation of high-priced Short-horns, purchased at the great sale of Mr. Tanqueray, of Handon, near London, England. By a letter from Col. M. we learn that they arrived in first-rate condition. Col. M. has also received by the same ship, twelve very superior South Down ewes from the noted flock of Jonas Webb. They are in as good order as the cattle. Col. M. sends us the following memorandum:—

Minerva 2nd, roan, calved January, 1850. Sire, St. Marum (8525), dam (Minerva), &c., &c.

Iris, roan, calved June 8, 1850. Sir, Louis D'Or (9336), dam (Ladye Love), &c., &c.

Minerva 4, red, calved February 1, 1853. Sire, Lord Warden (7167), dam (Minerva), &c., &c.

Victoria 26, red and white, calved March 25, 1853. Sire, Baron Warlaby (7813), dam (Victoria 4th) &c., &c.

Oxford 16, red roan, calved May 17, 1853. Sire, 4th Duke of York (10,167), dam (Oxford 6th), &c., &c.

Surprise, Roan, calved January 23, 1854. Sire, Gillivan (11,529), dam (Silence), &c., &c.

Louise, red, calved May, 1854. Sire, Sweet William (12,161) dam (Lucy), &c., &c.

Delia, roan, calved November 24, 1854. Sire, Duke of Glos'ter (11,382), dam (Delia Gwynn), &c., &c.

Oliver Jordan, red and white, calved July, 1855. Sire, Duke of Cambridge (12,742), dam (Iris), &c., &c. This calf was born on the voyage, and named after the vessel.

We also have brought out our young Duchess 71st, the progeny of our celebrated cow Duchess 66th (the 700 guinea cow). This heifer calf, as you may recollect, we bred in England, and was got by Duke of Glos'ter. We refused 700 guineas for her this spring, just before shipping her for this country.

BREAD FROM GROWN WHEAT.

There is but little grown wheat in this part of Canada, as the heavy rain occurred before the wheat was sufficiently ripe to be injured by it. In the western part of the province, complaints were more frequent at the time of harvest, but we have heard little on the subject since. We notice a great disparity in the price of wheat west of Hamilton and that grown in the vicinity of Toronto. When 8s. 6d. and 9s. was the ruling price in the Toronto market, 7s. 6d. and 7s. 11d. were the highest quotations in Hamilton, and further west they fell to 6s. 3d. and 7s. Now, the cost of freight from Hamilton to Rochester and Oswego can be little, if any, greater than from this port. Why, then, so great a difference in price? Is it on account of difference in the quality of the grain?

For the benefit of such of our readers as may be compelled to use flour of grown wheat, we extract

the following recipe from the *Michigan Farmer*. A very large proportion of Western wheat is sprouted, and our neighbours have been obliged to set their wits to work to remedy the evil as far as possible. If any of our subscribers know of a better plan than the following, we shall be glad to hear from them, and make it public:—

"Place the flour in a pan under the stove, or where it may become hot, and keep so for five or six hours until thoroughly dried through. Knead the dough harder by working in more flour, and bake slower and longer, so as to dry out the moisture, and you will have light, dry, white bread. A little alum will improve it, if the wheat was badly sprouted."

Thrashing Machines at the Paris Exhibition.

We hear nothing of the Thrashing Machines sent from Canada to Paris. What became of them? We understood from one of the proprietors of the Brantford Works, at which one of the machines was made, that it had been duly sent, &c. Paige's machine has been alluded to by correspondents at Paris, yet it does not appear in the trial.

We learn that the prize has been awarded to Pitt's machine, an American invention. We believe that this machine threshes and cleans at one operation. The following is a summary of the trial:—

The threshers were tried before the mowers and reapers. Six men were set to threshing with flails at the same moment that the different machines commenced operations, and the following were the results of half an hour's work:—

Six threshers with flails, - -	60	litres of wheat.
Pitt's American thresher, -	740	" "
Clayton's English " -	410	" "
Dunoir's French " -	250	" "
Pinet's Belgian " -	150	" "

In regard to Pitt's Machine, the *Moniteur* says:

"Pitt's machine has therefore gained the honours of the day. This machine literally devours the sheaves of wheat; the eye cannot follow the work which is effected between the entrance of the sheaves and the end of the operation. It is one of the greatest results which it is possible to obtain. The impression which this spectacle produced upon the Arab chiefs was profound."

Alderney cows have been substituted for Ayrshires on a large dairy farm in the south of Scotland, and more butter was yielded; but the Ayrshire made the most cheese.

STEAM PLOUGHS AND THEIR FAILURES.

The Canadian Steam Plough, about which there has been some "puffing," aided by a loan or bonus from the provincial purse, appeared at the Paris Exhibition minus an efficient boiler, a matter, one would suppose, of very easy adjustment. Our own opinion, expressed to the inventor and the Minister of Agriculture on view of the model at Quebec, was, that it must fail for two reasons—1st, It would not work at all (*i.e.* as a plough) in any land except bare fallow; 2nd, It would be *more costly* than horse power, even if it could be made to work on any soil—a point in regard to which we had strong doubts. Lord Elgin, however, pronounced a favourable opinion; some other gentlemen, equally well qualified to judge, concurred, and the money was advanced. Mr. Mechi, upon such high recommendations, undertook to test the thing at Tiptree Hall; but it appears that, in spite of these influential patrons, the steam plough has failed for want of a boiler!

We take no pleasure in recording this failure, although the invention, if it can be called one, never had any merit in our eyes. It would have been very gratifying to Canadian pride, if a humble colonist, and a printer too, had accomplished the long-sought-for achievement,—a practicable steam plough. We fear the difficulties to be surmounted are insuperable, so long as steam engines require a weight of metal in their construction that their own power will not move along the ground. Another inventor lately exhibited a steam plough—or rather a gang of ploughs—*on paper*, which drew a long, flattering notice from a leading city journal; and he, too, asked for public money to test his machine,—whether he has yet received it, we are unable to say. And what do our readers imagine this gentleman proposes to accomplish? Nothing less than this:—He intends to mount an engine, *boiler* and all, on three wheels; to this he will attach from ten to fifteen ploughs, ranged in proper order, and adapted to turn furrows from six to twenty-four inches deep! By putting on steam, he expects to see his engine start off upon its three wheels, over *soft* ground, and *up* as well as down hill,—for where will he find *level* fields?—dragging its formidable array of ploughs after it!

To convince him, if possible, of the absurdity of his scheme, and the folly of neglecting his watches, which he *could* make "go," for a machine so much out of his line, we asked him the *power* of his proposed engine. He thought about twenty horse

power. We then asked him if he had estimated the *weight* of such an engine with its necessary machinery, and of the carriage on which he proposed to mount it, to say nothing of the ploughs. He had not yet made the calculation! We then asked him how many horse power would be required to drag *one* plough through the earth at a depth of two feet. He had not made the estimate! Our advice was, to procure some reliable data, and then sit down and make these calculations before he asked aid from the Government or from individuals. We stated our belief as in the other case—1st, That the machine would not move itself in soft ground or up an incline; 2ndly, That if it did move its own weight, *one* plough two feet, or even eighteen inches deep, would *anchor it fast.*

There are certain *facts* in machinery as well established as any facts can be. The laws that govern matter, and all experience in the application of them, have established these facts beyond doubt or dispute; and we must therefore make them the starting points in the field of invention. To ignore them, is to insure failure beforehand. The most plausible expedient for overcoming the difficulties presented by the weight, or inertia of the engine itself, is that of a revolving track or "rail" for the locomotive. But even this, we fear, will fail when any considerable incline is to be overcome. A steam plough that will not move, except upon level surfaces, will never be worth much in Canada.

Royal Agricultural Society of England.—Meeting at Carlisle.

We take the following Report of this recent meeting of this important Society from the *Mark Lane Express* of July 30th. Notwithstanding the very unfavourable state of the weather, the Show appears to have been signally successful:—

For the last time, at least as it is said, this is an "off" year with the Highland Agricultural Society. The meeting at Carlisle may thus be considered a joint exhibition of the two national associations. In some respects it has been so, but by no means to that extent which might fairly have been anticipated. It is only right to say that no blame rests with the management of that body under whose auspices the gathering took place. The Council of the English Society arranged distinct classes for Scotch cattle and sheep, and it only remained with our northern friends to enter for them. There was ample opportunity, if they only chose to avail themselves of it. This they did to only a limited degree. Many of the premiums offered entirely in compliment to them resulted in but little competition. With the cattle this was particularly the case; while with horse and sheep, on the other hand, we had some better evidence of what Scotland really could do.

If, however, this support was wanting in one way, it was by no means denied us in another. As far as a question of funds goes—"money taken at the doors"—the Carlisle meeting has been one of the most successful of all the Society's shows. The majority of these visitors, too, of course came from the North, and crowds that weather, from first to last almost altogether unfavourable, appeared hardily in any way to effect. On Thursday, above all, they still continued to throng in, and gather round their own favourites sorts. The grey Clydesdale horse, the mountain sheep, and the prize Galloway, were but seldom accessible. And if the Southron had not paid his half-guinea on the day previous, he must have found it hard work to com over the merits of these champions of Scotland's agriculture.

Fortunately, there was plenty to attract his attention in other directions. As a stock show, that of Carlisle is altogether one of the very best the Royal Agricultural Society of England has ever been able to command. Following the usual course of the prize-sheet, we scarcely remember a class but that was worthily represented. From cattle to sheep, from sheep to horses, and so on to pigs, of various sorts and sizes, and still we came on something very like general excellence. The prize list, to be sure, particularly in cattle and sheep, gave in names that alone assured us we should find the very best of their kind. More than this, however, those beaten were worth beating, and many an animal undistinguished here will live to see a better day. The reader has only to run his eye over the prize list to assure himself of the quality of the Carlisle Show.

Commencing with the first class in the catalogue, as now undoubtedly the most fashionable of all our breeds of cattle, we meet with extraordinary display of Short-horns. This, too, might have been expected. Yorkshire and Lancashire, despite the gradual distribution of the race, have still our best herds; and the houses of both York and Lancaster again did their best. Mr. Richard Booth—as we have just said, the name is a guarantee—took the first prize for the best bull, and again for the best cow; Mr. Townely for the two best young bulls, as well as for the best heifer. After them we have a string of other good men dividing the other premiums and commendations amongst them—Lord Feversham, Mr. Ambler, Mr. Fawkes, Mr Douglas, Mr. Stratton, and Mr. Sainsburry. The mention of these alone will show what there was to beat. The first prize bull is worthy of especial commendation, and this not only for his real merit in form and touch, his extraordinary length—that long, low, and even look, which argues so much for perfection of form—it is not only for this we would uphold him but, perhaps even more so for the condition in which, to borrow from another pursuit a most significant expression, "he was brought to the post." Of all the bulls entered at Carlisle, Mr. Booth's white "Windsor" was not only the best for shape and symmetry, but he was best fitted to breed from. Compared, indeed with some of the over-fed animals which stood near him, the superficial observer might wonder how he came to be placed first. It is, however, only the superficial that can be deceived in this way, while it is a very great fact to establish that a lean and reall used bull did beat, on his innate merit, all that pamy pering and over-feeding could make up to show against him. As was well said by those who knew him best, "he was too good for that."

Lord Feversham's bull, which took the second prize here and the first at Paris, is one of Lord Ducie's highly-bred stock—a son of the Duke of Glou-

cester, and purchased at the Tortworth sale. It is rather curious that we do not find more animals from this celebrated herd at our different stock shows Mr. Gunter and his Duchess, for instance, might surely shine here. Mr. Towneley's young animals were remarkably forward, giving every indication of that early maturity which is argued as one of the greatest recommendations of the Shorthorn; while the first and second prize cows—Mr. Booth's Bridesmaid and Mr. Douglas's Rose of Summer—have, perhaps, taking them together as first and second, never been surpassed. Indeed, to show the excellence of this class, we may mention that Mr Stratton's Matchless, herself a very perfect animal, claims only a simple commendation.

It would be difficult to say from what cause, but there is no breed of animal which is so uncertain an exhibitor as the Hereford. Of late years, in fact, the meetings have been generally against them. Even at Gloucester, if we recollect aright, the entry was but a poor one. At Carlisle, on the contrary, it was very good, and, taking the whole of the classes, considered by far the best we have had for a long period. There were many good judges, not so wedded to the Durhams, who considered Lord Berwick's bull as the best in the yard.

Of the Devons there was but a small show—compensated for, however, by the excellence of Messrs. Quartley's and George Turner's stock. Mr. Turner's cows were very generally admired, and certainly nothing could show higher breeding or finer quality. Mr. Farthing, who was only competitor against the Devon men, received some well-merited commendations—the "*highly*" proves how close he was to the prize animals.

Coming on to the Scotch Cattle, strange to say, we have the entries yet more limited. In four distinct classes for Ayrshires there were altogether but a dozen entries—for the best bull of any age but one bull sent. In the Angus and either Polled Breeds there were four classes, with just four animals to contend for them—one in class one, none in the next, two in the third, and one in the fourth. The Highland and other Horned Breeds numberd four classes and three beasts! Nevertheless, almost all the prizes offered were awarded, although beyond a pick or two from the Angus and the Ayrshire there was nothing of extraordinary merit It was the weak feature of the whole show. In the special prizes offered by Mr. Head, the Galloway showed much stronger. Every class was well-filled, and both in the cows and bulls there were some animals of much excellence which came in for a great deal of observation from breeders who had hitherto seen but little of them. We cannot help thinking that our Scotch friends have saddly missed their opportunity, and that it would have been to their advantage to have shown us even something more than Clydesdale horses, Galloway cattle, or mountain sheep.

Co-equal in every way with any other department —taking at length their proper position in the exhibition of an English agricultural society—we have the show of horses. It is but a very few years since that we heard members of the Council assert that it was impossible to obtain anything like a becoming entry of horses for the majority of those prizes they might wish to offer. It is but two years since that we saw at Gloucester one of the very weakest collections of horses, of almost any sort, that any such public occasion could be supposed to make up. It is only right to add that this extraordinary improvement is no merely lucky chance, or turn in the wheel of Fortune. Much has been done in the interim. Something by the Council of the Society, and more by those friends they have since visited. As members of and spectators at the recent meetings of the national society, we owe something far beyond any formal vote of thanks to the mayors of Lincoln and Carlisle. By their judicious aid a new spirit has been infused into a weak place, and it will be our own fault if this be not only kept up, but yet still further encouraged. Despite ploughing by steam which is to come, and travelling by steam that has come, there is no branch of a farmer's duties that needs more impressing upon him than this greater attention to the breeding of horses. And this is not merely to the breeding of heavy draught horses, but even of hacks and hunters. The Lincolnshire farmers—not the worst in the world—breed their hacks and hunters. The Yorkshiremen have theirs, too, and both with a profit. There are other good farmers, a sad majority so far, who have not a cart-horse fit to show, or a hack that ought to be ridden off their holding.

It is these gentlemen that the Royal Agricultural Society can now aid. It is in ministering to this common want that the English Society now stands pre-eminent. Neither the Scotch nor the Irish national associations have anything like a *generally* good show of horses; nothing, in fact, so far as we have seen, worthy of them. It is, so, rather a proud thing to say, that if you want to see a good horse you must go to the English show. You have him here of every variety—the best to breed race horses, hunters, coach horses, and cart horses. At least, we speak from what we saw at Carlisle; and no one who was there will gainsay us.

But a very short time ago—we must still look back to see what has been done—perhaps one hunter stallion might be ready to take any premium offered under the auspices of the Society. They would not show, it was said. The owners of horses, already in repute, would not risk their being detoriated by the awards going against them. The best answer to this is the Carlisle Meeting. For the Mayor's prize of forty guineas, there were thirteen thorough-bred stallions shown, and these not merely some of the best bred—with the fame not only of race horses—but many of them winners of prizes at local agricultural societies, as stallions to get hunters. Amongst these were The Era, St. Bennett, A British Yeoman, and The Cure. The premium, it will be seen, was awarded to an Irish-bred horse, Ravenhill, but now standing in the neighbourhood of Carlisle; his chief opponent being The British Yeoman. It must, indeed, have been a very nice point between the two, the Yeoman being certainly the finer horse. A great many of his stock, of all ages, from foals to three-year-olds, were in the yard, and a more promising lot from one horse has seldom been brought together.

The class of coaching stallions, also a special prize from Mr. Richard Ferguson, the owner of Ravenhill, hardly produced so strong a class. This, however, was well carried out by another series of special prizes from the Local Committes, which included, and particularly shone in, hunter and harness mares and geldings. Some of the brood mares were very far beyond even what one is accustomed to rank as "a good sort." If we might instance one, it would be Sir Wilfred Dawson's Retriever mare, "Madam," which, with three-year-old colt by The British Yeoman, made up a wonderful family trio. They were classed as harness horses—we should be inclined to put them to something better. The

prizes coming directly from the Society were confined to horses for agricultural purposes, including four distinct classes of Clydesdales. The first prize in the open class went to a Leicestershire horse, "Nonpariel," which took the second prize as a two-year-old at Windsor. He is now, at six years old, grown into a very fine horse, combining very happily those two great recommendations of a draught horse, strength and activity. The whole of this class, as well as the two for younger horses, was very strongly represented, while some of the mares and fillies where even better. The two prize mates might be instanced, while the whole class of fillies were generally commended. The entries in horses for agricultural purposes included some from nearly all parts of the kingdom. Amongst these, the few Suffolks shown might by many have been thought worthy a better place. A filly of Mr. Barthropp's was, indeed, very nearly taking a prize in the strongest of all these classes. It struck us, however, that the Suffolk, either by judge or jury, was scarcely so well appreciated as he might have been.

The Clydesdales, though a good, was by no means a uniform or a large show. The first prize horse was a long way the best of his entry, and the same may be said of Mr. Douglas's mare. One or two of the aged stallions rather disappointed us in what we expected to find as the common character of the Clydesdale horse. There was hardly that light active *look* which, at least, one has been led to associate with the horses of the Clyde. We question whether generally these might not have been better.

The chief strength of the sheep show was with the Leceisters, Cheviots, and Black-faced Mountaineers to all of which the breeders on and over the Border very largely contributed. In the Leicesters, however, they had to succumb to the two best flocks we have—those of Messrs. Sanday and Pawlett, who divided the prizes between them—the lion's share going to the former. The entry of Shearling Rams was very large, while it was almost as remarkable for uniform excellence. Our Scotch friends appear now to depend less and less on a large coarse sheep, and proportionately more on purity of breed. Compared with the other Longwools or Cotswolds, of which there was but a short show, the Leicester has a very refined look, and from what we could gather the comparison was altogether in his favor. There is still no denying that the Cotswolds are extraordinary sheep, the size of some of them being really "prodigious" The entries here were mostly from their own head-quarters in Gloucestershire, and Messrs. Lane, Garne, and Beale Brown again in the ascendant.

In the Cheviots and Mountain Sheep, the north was unquestionably better represented than in any other of those classes in which breeders from those districts might have been expected to distinguish themselves As special prizes, both sorts were eminently successful—the black faced twisted-horned mountain sheep giving a local character to the meeting that should have been further carried out by a better display of the rough-coated Highland cattle. No thing can be more different than these two varieties of sheep, while to the eye of the stranger the Cheviot looks by far the more useful of the two. Still, for a hard life, there is said to be nothing like a mountain flock.

The Southdowns gave way here to the Leicesters, and the show of them was consequently but a small one. They included, however, many of our best breeders—the Duke of Richmond, Lord Walsingham, Lord Chichester, Mr. Ringden, and Mr. Lugar. Mr Jonas Webb's entries were not sent; but his sheep were becomingly represented by Mr. Rigden, who took three out of the four prizes for rams with sheep bred directly from the Babraham flock. In the ewes, Mr. Lugar had a pen of five very beautiful and nicely-matched, which deservedly held the head place in their class, being well backed by two good selections from Lord Walsingham's though by no means of so high a *caste* as the first prize pen.

The pigs were chiefly remarkable for the immense size which some of them had attained, and the absurd state in which they were exhibited. The judges disqualified some from being entered in wrong classes, and others by the aid of Professor Simmonds, for being over age. They might have very justly extended these condemnations, and sent many more out of the Yard as not being in a fit state to breed from. We really believe that, had the weather been fine, and the sun's rays anything as strong as we have had them during this month, some of the unhappy brutes could not have lived through the week. As it was, we heard one or two had to be physicked as they lay—stand they hardly could; and if the fat pigs of the Smithfield week can be made fatter than these, then perhaps we may allow that, in this particular section of the show, one is a breeder's and the other a butcher's. At present we confess we cannot mark the distinction. This department of the Yard was not quite on a par with the excellence to be found in others; though of the two classes, large and small breeds, the small pigs, both of the black and of the white sorts, were much to be preferred.

A very ragged, as well as a very limited poultry show, to be commended only for a few good Dorkings, completes our synopsis of the five stock catalogue. The time of year is said to be against this new eature. It is certain that, so far, the poultry exhibition has not been worthy of the society

From a cause very easily explained, the implement yard was not numerically so well filled as usual. We are inclined, however, to regard this as anything but a falling off. The northern part of the kingdom is not famous for agricultural implement makers. Beyond the Busbys and Crosskills of Yorkshire, there is scarcely a firm of any very high repute in this particular branch of mechanics. This will itself go far to account for a comparatively small show. But this is not all. There was a day, and not a distant one either, when the implement department of the Royal Agricultural Shows was crowded with inventions, not half of which were half perfected. The evil arising from this was manifest enough At present we have not, may be, so much to labor through, but almost every piece of machinery has now an established character and a recognized use. Manufacturers are gradually declining unprofitable collision with each other, and directing their energies more to the improvement of such machinery as they find they excel in. Thus—the Ransomes, the Howards, and Busbys are known for their ploughs; the Hornsbys, Tuxfords, and Clayton and Shuttleworth, as famous for their steam engine. Crosskill has his carts and his clod-crushers. Garrett his drills and his dressers; while the two London firms Messrs. Dray, and Burgess and Key, with Crosskill, here again, are still approaching nearer and nearer to the realization of a reaping machine.

This was essentially the character of the Carlisle Implement Exhibition. With one grand exception there was no novelty, but everyone was found to be still further perfecting what he had already been

distinguished for. This was particularly the case with the steam engines, in the order of merit for which some very remarkable changes occurred. The saving in coal in the first-prize steam-engine is regarded as something extraordinary, and the performance created a very general sensation. It is but right to add that the award was unanimously agreed to, while the achievement must have the effect of calling forth all the energies of other firms who have so far, perhaps, been but too well satisfied with what they had attained to. The steam-engine trials at Chelmsford next year will be something more than usually interesting.

Of almost equal importance, and unquestionably of more attraction to the agriculturist himself, are the trials of the ploughs and the reaping machines. In the former of these the struggle was, as usual, between the Ransomes and the Howards, for both of which Mr. Ransome was declared successful; Howard's lighter plough receiving a high commendation. The ploughs of both these firms were beautifully turned out: the competition in the light of general purpose plough very close, and the award in this class one of the few that was at all canvassed. We speak on the authority of one of our best judges who saw the work when we say that the Bedford plough had hardly justice done to it; while a contemporary declares decisively that it ought to have had the prize. We are always loath to go against the judges, and in doing so here we are only quoting the opinion of others.

After but a partial experiment upon rye, the further trial of the reapers has been postponed until harvest, when four have been selected to meet again on the farm of the President, Mr. Miles, in the neighbourhood of Bristol. These are Crosskill's Bell, Dray's Hussey, Burgess and Key's, M'Cormick, and Palmer's—a Scotch implement. Crosskill's, Dray's, and Burgess and Key's have all been much improved, the two latter particularly in the delivery; and the race, according to the best judges, is supposed to be between them—Dray, from his past successes, being rather the favourite.

Few even of the most sanguine ever expected to see the two hundred pound prize for a steam plough awarded at the Carlisle meeting. In simple truth we are yet a long way from any such a realization. Of all those entered and tried, or attempted to be tried, none did much to advance us in this direction. It is doubtful whether, after all, Boydell's implement will ever be of much use in cultivating the land; while Usher's, much longer known and much more talked of, proved little less than a lamentable failure. Cumbrous and curious in the extreme, it was long before it could be got to move at all; and when it did, it commanded but few admirers. By far the most satisfactory of all the steam implements to be used in the field was Fowler's draining plough, which was exhibited at work outside the yard. It was much appreciated, and, as now amended, promises to be a serviceable and economical invention for landowners and occupiers. Surely, though, this should come directly under the proceedings of the Society, which would no doubt provide for its being put to work. It is just one of those cases where the authority of such a recommendation would be doubly useful.

Amongst other more modern discoveries was Chandler's liquid manure drill, which would now appear to have no competitor. Mr. Spooner's was entered, but not exhibited. The Messrs. Garrett, however, had Chambers' clever manure distributor in their standing, and which, as with Chandler's, again obtained a premium.

SHOW OF STOCK AT CARLISLE.

In addition to the foregoing general description of the Show, we subjoin a few particulars from the same journal's Special Correspondent:—

A more splendid show of Shorthorns we believe was never saw—so uniformly good, (with one or two exceptions,) and denoting all that beauty of form and color and feature which all so much admire and love to see, but those better and more substantial qualities—a large, rotund proportionate frame, evidencing a tendency or capacity to produce plenty of good lean flesh, and of the primest quality, as well as to lay on, as they do, such enormous quantities of fat. This is as it should be; who can dine from off fat meat? We are glad to notice such a feature at this meeting. We think more attention is given to the breeding of animals of heavier frame, and denoting a tendency or propensity to produce good lean flesh, than heretofore. For the public good, we beg most earnestly still closer attention to this principle in breeding in every class.

The first prize of £30, for bulls over two and not exceeding four years of age was awarded to R. Booth's "Windsor." He is 3 years and 9 months old and described by the *Express* as a splendid animal, having all his proportions in good outline; his color white; he is very cylindrical in form, but if anything of better than cylindrical form, being deeper in frame than circumference. His head is rather plain, and horns wide, but his eye is fine; back is admirably formed, level and broad throughout; his chest is full, and breasts prominent: his shoulder and ribs well out, full plait, peep flank, long rump, and thigh deep, twist very good.

Lord Feversham's bull "Gloucester" took the second prize of £15. He is only 2 years and 2 months old, but possesses all the full outline of maturity.

Mr. Townsley's bull "Master Butterfly" which took the first prize as a bull calf at Lincoln last year, now takes the first prize of £25 as a yearling. He has a beautiful well-formed head and muzzle, and fine eye and horns; his form that of an oblong cylinder of considerable length, and well proportioned; his back, broad, level, and fat, loin unusually broad and full.

The first prize of £20 for cows in milk or in calf was awarded to R. Booth's "Bridesmaid" a roan 4 years and 4 months old. Her frame is beautifully symetrical, "an animated cylinder of deep and surpassing proportions."

The Herefords, 32 in number, were of average quality. The *Express* says: "we have never seen a much better Hereford bull than Lord Beswick's and many other animals possessed extraordinary merit. If they do not equal the Shorthorns as a breed of cattle, they are at least next in public favour to them." Lord Beswick's bull "Altringham" red, with white face, 2 years and nine months old, took the £30 prize in the first class. The *Express* says:

"This is a superb animal. He is high enough, is well-formed and cylindrically shaped, deep, and good throughout. Good girth and chest, level back, and broad, but ribs, thighs, and twist, not quite corresponding. Extraordinary flank, long and good; frame long, full, and noble; head and neck commanding. We incline to class him as the best bull in the yard—such uniform depth and substance, and offal very fine."

Lord Radnor's bull "Carlisle," same age and co-

lor took the second prize. He is a deeply formed, handsome bull, but not large; of excellent quality; very cylindrical, or rather oval form; deep but not wide hips: narrow thighs; full fair rump; but flat ribs; good flank.

The show of Devons was small, only 23 animals, whereas the average of the past nine years was 51 and that of Shorthorns 98.

James Quartly's, 2 years and 3 months old bull "Napoleon," took the £30 prize in the first class. He is red, beautifully formed, symmetrical and compact, and of exceeding quality, handsome head, "hips as usual, somewhat too narrow," flank and other lower parts fair, though rather defective. The same gentleman's bull, "Duke of Wellington," took the second prize. In the class, cows in calf or in milk, G. Turner's 6 year old cow "Lady," took the first prize, and his 5 year old cow, "Hawthorn," the second.

The shew of horses was large and good, the Clydsdale predominating. In sheep, the Leicester were best represented, though the pure animals were principally from two flocks, those of Messrs. Landry and Pawlett. There was a short show of other longwools, but Messrs. Lane, Garne & Brown exhibited some of their Cottswolds, which, in the language of the *Express*, were, "extraordinary sheep, the size of some of them being really prodigious." The show of Southdowns was small, but included somewhat excellent animals from the flock of the Duke of Richmond, Lords Walsingham and Chichester, and Messrs. Rigden & Lugar. The pigs, it is said, "were chiefly remarkable for the immense size which some of them attained, and the absurd state in which they were exhibited. They were so fat, that had the weather been hot, "the unhappy brutes could not have lived through the week." The small breeds, both black and white, had the preference. The poultry show, which is a new feature, was a failure.

CROPS IN NEW YORK.

The Rural *N. Yorker* the leading agricultural journal of western New York, makes the following reference to the grain crops of that State:

Looking at Wheat—or rather the weather-beaten straw which ought to contain, wheat—we see little to cheer us. That which has been "put to question" of the threshing machine, has turned answer in a product of from five pecks to ten and even fifteen bushels per acre. In some localities very little of the Soule's or Hutchinson wheat—however promising it may have looked before the harvest—will replace the seed sown, in quantity; and as to the quality, the shrunk, grown, weevil-eaten kernels are such as would have been thrown to the pigs and chickens three years ago. The Mediterranean and Golden Drop do better, but they disappointed the farmer by the meagher product. The weather and Hessian fly injured them, while the weather and midge did their worst to later varieties. Here and there a region escaped with small damage from the latter, but it is nevertheless true that wheat may be put down as a failure, so far as any profit is concerned [even at $2 a bushel,] in any of the best grain-growing districts of Western New York.

Of Oats there are enough in the country to furnish fuel to every *equine* locomotive on the track, or off, either. Still thousands of acres were drowned out by the June rain, and other thousands injured more or less. Oats are plenty and they will be needed, for.

The Hay crop has been got in—or left out—in miserable condition. There are meadows of greater or less extent, or many a farm, where the grass rotted—yes, *rotted*—in the swath or cock, and is entirely worthless except for manure. Many a musty mow of hay will be tramped into the dung heap next winter, or forced down the cattle by sheer starvation and the lack of decent straw as a substitute. Some good hay was secured—the second growth after the rain—and some snatched up between the showers—but hay and wheat this year cost the farmer higher prices than he will be likely to get for them.

Barley is a good crop. We have seen as fine fields of barley as ever ripened in Western New York. But it was not sown very extensively, at least we have noticed little.

WHY IS FARMING UNPROFITABLE?

Why is it that nine-tenths of our farmers find farming to be unprofitable? By *unprofitable*, I mean paying day-wages to the farmer, and but a very small per centage on the capital he has invested in land, stock, tools, &c. Now this is a serious question—a question often asked, and one to which every practical farmer ought to be able and willing to reply. Hundreds of farmers, who own from one hundred and fifty to three hundred acres of good land, passably stocked, find themselves barely able to prove that they are as well off to-day as they were a year ago: and many declare that the laborer, who has nothing but his hands with which to get a living, lays up more money in a year, than they with all their broad acres and flocks of cattle and sheep. If this be true, and I have no doubt but in many instances it is, a farm managed as a large share of our farms *are* managed, is a clog to a young man, with a small family who is endeavouring to lay up something for those "rainy days" which are sure to fall to the lot of many, if not all of us, ere we reach the end of the journey of life.

Farming is *not* unprofitable because labor is high, because the seasons are unpropitious, or because farm produce brings a low price. The laborer is worthy of his hire; the harvests are bountiful, and the rapidly increasing number of consumers, renders the prices of provisions, to the producer especially, quite satisfactory, Such is the case, and still the question is asked, why is farming unprofitable?

We frequently *read* about, and sometimes even *see*, men who have supported families, on the produce of two, ten, fifteen or twenty acres of land, that was when they commenced, no better than the average, in good style,—given their children a good education, and laid by a few dollars in the bargain. Then why cannot men who own two hundred or one thousand acres of land, make farming profitable? The reason is, *they plant too much*, spreading their limited quantity of manure over two large a surface, thereby impoverishing their land and wasting their labor. Eighty bushels of corn, and other grains in proportion, may be raised on one acre of land much easier than on two, and where land is so cultivated as to produce such crops, it is constantly improving, and *vice versa*.

The farms of A. and B. join each other. A.'s consists of one hundred and fifty, and B.'s of forty acres. A. has forty acrers of meadow, on which he annual-

ly cuts, on an average, thirty-five tons of hay. B. has fifteen acres of meadow, yielding two and one half tons of hay to the acre, or thirty-seven and one half tons in all. A. plants six or eight acres of corn every year, which yield him about thirty bushels to the acre, and has other field crops in proportion, with proportionate results. B. plants two or three acres of corn, harvests from seventy-five to eighty bushels to the acre, and is able to do all his work himself. A. pays out from one hundred to one hundred and fifty dollars a year for help. A. talks of hard times, and thinks seriously of "moving west," but money could not tempt B. to part with his snug little homestead, satisfied, as he is, that he could never find a better.

The value of A.'s farm is constantly decreasing, while the value of B.'s is as constantly increasing; and why? Simply because A. *skins* his land, and B. does not. A. plows and plants indiscriminately—heaps of manure lie around his barns from year to year; he takes no agricultural papers and has no agricultural books, and he sells his best stock, and keeps that which is unsaleable. It is not so with B Not a particle of fertilizing matter is suffered to remain in the vicinity of his buildings from one year to another; he plows only so much land as he can properly manure: he subscribes for the *Country Gentleman*, and *reads* it too; he never parts with his choicest stock; and A.'s talk about the superiority of western lands awaken in him no dissatisfaction with his own.

Farmer B. does *not* find farming unpleasant nor unprofitable, but farmer A. does—the *why* is self-evident.—*Country Gentleman.*

BREAKING STEERS.

In breaking a pair of steers, first confine one of them in a yard 14 to 18 feet square, high and strong enough to hold him; then enter the pen with a switch three or feet long, and with your pockets filled, not "with rocks," but with ears of corn, apples, carrots, &c.. Tame the steer by feeding him, and convince him that you mean no harm. Having done this, I introduce my business to him, by getting him into a corner with as much gentleness as possible. Here stroke him and pet him in various ways feeding with a nubbin of corn.

Of course he must learn to *haw*,—so I strike him gently on the *off ear* with my switch, and after that with my back towards him, twist his tail, (a little twisting is better than none;) I conduct him again to his corner and order him to *who*,—which from the force of circumstances he is compelled to do. Thus I teach him to *stand* as well as to *haw*, and in a short time he well obey the command in any part of the pen.

After sufficient practice in the pen, I let him out into a large yard, and then drive him with equal success. Here he becomes well accustomed to the *Who, Haw, Gee*, processes. But if he does not prove sufficiently tractable I return him again to the small yard for further discipline. The other steer I serve in the same way.

Preparatory to yoking, I drive them both into the pen and exercise them together, making one stand while the other comes up as if coming up under the the yoke. Then taking the bows out of the yoke, I lay it on their necks, taking care not to frighten them in the operation, then put in the bows, and I have a yoke of oxen! But previous to yoking, drive them side by side in the large yard. While driving in the large yard either single or double, use a whip 8 or 10 feet long, and when driving both, put on a lash two feet long.

Cautions.—Keep cool! use caution for yourself and for your cattle. If they *kick* you, look out next time, but don't return the compliment, for you are not to consider yourself on equal terms with them. A little patting and rubbing is better. If you have not Christianity enough to return good for evil, don't undertake to break steers. I had rather break a pair of wild steers for $5, than a pair that has been injudiciously handled for $10.

Be careful not to overload them, and never drive them until they are out of breath.—Many cattle are broken in spirit and constitution while young. Indeed, very few know what a good, well broke and well fed, and well tended pair of oxen can do Never whip, and never talk loud. The superiority of this mode in economy of time, in ease of execution, and in final results, will be apparent enough to any one who tries it.—*Corr. of Wool Grower.*

The Potato Rot.—Since the 20th ult., we have noticed that the tops of potatoes have in some cases been struck with rust, and we hear that the tubers are rotting. To what extent the crop will be effected cannot be told at present. The early portion, in this vicinity, was generaly matured before the rust made its appearance, and the yield is large, the tubers sound and of superior quality. The growth of the plant has generally been very strong and of a healthy aspect, till the latter part of August. Some lots which have been most blighted, were the most luxuriant and flourishing till within a day or two of the change. We are inclined to think that the crop *set out* for a large yield, and that the tubers were generally more abundant and of larger size when the rust appeared, than they have been in any preceeding crop, at the same time, for many years. We think, too, that the rust is less virutent than usual, which leads us to hope that a much greater portion of the crop will be saved.—*Boston Cult.*

Effects of Green Crops.—The proportion which green crops bear to each other with respect to weight of produce, and also in respect of exhausting the soil, if it be drawn from the weight of vegetable substances that is raised from the land :—

Mangel wurzel	25	Kohl rabi	14
Cabbages	25	Swedish turnips	13
White turnips	16	Carrots	11
Potatoes	15		

This mode of judging is quite opposite to the commonly received opinion. By taking the weight of nutritive matter which is produced from a given space of ground, as the standard from which to judge the results are very different, and will be found to agree with daily experience, or at least the common opinion :

Potatoes	63	Kohl rabi	17
Cabbages	42	Swedish turnips	16
Mangel Wurzel	28	Common turnips	14
Carrots	24		

Sheep.—Poor fences will teach ewes and wethers to jump, as well as rams, and for a jumping *flock* there is no remedy but immoderately high fences, or extirpation. One jumper will soon teach the trick to the whole flock, and if one by chance is brought in, it should be immediately hoppled or killed. The last is by far the surest and safest remedy.—So says Randall.

INFLUENCE OF THE MOON.

The believers in the Moon's influence are quite numerous in Canada, and no doubt some of our readers hold the same faith. We have known farmers put themselves to considerable inconvenience in order to avail themselves of this supposed influence. It may be worth their while to read the following, which we find in that excellent journal, the *Maine Farmer*:—

Time for Felling Timber.—An opinion is generally entertained in New England, and especially in Maine, that timber should be felled only on the decline of the moon, for if it be cut down during the increase it will not be of good quality. This idea prevails in many countries. It is believed in England, and made the ground of legislation in France —the laws of the latter country prohibiting the cutting of timber on the increase of the moon. The people of South America adopt the same creed, and the Germans have the most implicit confidence in its truth.

According to some explainers of the supposition, the sap ascends much more swiftly during the decrease of the moon, and they infer, therefore, that timber which is felled in the first or second quarter of the moon, when the pores are more filled with sap, will be spongy and more liable to attack by worms; that it will warp and split by exposure to very slight variations of temperature; but, on the contrary, timber felled in the third or fourth quarters, when the sap ascends with diminished force, will be more dense and durable, and fitter for the purposes of structure.

I think it would be hard to imagine, in the whole range of nature, a physical relation more extraordinary, unaccountable, and reasonable than this supposed correspondence between the movement of the sap and the phases of the moon. Most assuredly, theory affords not the slightest countenance to such supposition, and on the face of it, it is inconsistent with itself; but let us enquire as to the fact, whether it be really the case that the quality of timber depends up on the state of the moon at the time it is felled.

The celebrated French agriculturist, Monceau, made direct experiments for the purpose of testing this question, and clearly, fairly, and conclusively showed that the qualities of timber felled in different parts of the lunar month are the same. He experimented with a great many trees of the same age, and never found any difference in the quality of the timber, when he compared those which were in the decline of the moon with those which were felled during its increase; both afforded timber of the same quality. Other distinguished men have experimented with the same results.

Supposed Lunar Influences on Vegetables.—It is a maxim everywhere, among gardeners, that cabbages and lettuce which are desired to shoot forth early, flowers which are to be double, and trees which it is desired should produce early ripe fruit, should severally be sown, planted, and pruned during the decrease of the moon; and that, on the contrary, trees which are expected to grow with vigor should be sown, planted, grafted, and pruned during the increase of the moon. These opinions are totally erroneous. The increase or decrease of the moon has no appreciable influence upon vegetation, for the experiments and observations of celebrated agriculturists have proved this beyond a doubt.

Saner has attempted to assign the reason for this imaginary effect. During the day, he says, the sun's heat augments the quantity of sap which circulates in plants, by increasing the magnitude of the tubes through which the sap moves; while the cold of the night produces the opposite effect, by contracting those tubes. Now, at the moment of sunset, if the moon be increasing, it will be above the horizon, and the warmth of its light would prolong the circulation of the sap; but, during its decline, it will not rise for a considerable time after sunset, and the plants will be suddenly exposed to the unmitigated cold of the night, by which a sudden contraction of leaves and tubes will be produced, and the circulation of the sap suddenly obstructed.

If we admit the moon's rays to possess any sensible heating power, this reasoning might be allowed, but it will have very little force when it is considered that the extreme change of temperature which can be produced by the lunar light does not amount to the thousandth part of a degree. An old author, who believes all these absurd sayings, prescribes that beans be planted on the full moon and peas on the new, and it is easy to find sensible people who are eager to believe, without proof, that the moon, at the distance of 240,000 miles, acts advantageously upon the vegetation of beans, in one position, and in the opposite position, and at the same distance, she acts propitiously on peas. What a robust faith such people must have!

Supposed Influence on Putrefaction. Some classic authors have transmitted to us a maxim that the light of the moon facilitates the putrefaction of animal substances, and covers them with moisture The same opinion prevails everywhere. An impression is prevalent, also, that certain kinds of fish, exposed to moonlight, lose their flavor, and become soft and flabby; and that if a wounded horse be exposed to the light of the moon, during the night, the wound will become irritated and incurable.

Such effects, if real, may be explained upon the same principles as those by which we have already explained the effects attributed to the "red moon." Animal substances exposed to a clear sky. at night, are liable to receive a quantity of dew, which moisture has a tendency to forward putrefaction. But the same effect will be produced, if the sky be clear, whether the moon be above or below the horizon. The moon is only a witness of the fact, not the cause, and should be acquitted of the evil deeds charged against her.

Supposed Influences on Shell Fish.—The ancients supposed that oysters, clams, and other shell fish, became larger during its decrease. The poets Lucilius and Gallius believed it to be a fact. This matter has been carefully examined into by Rohault, who compared shell fish taken at all periods of the moon's decrease and increase, and during a period of twenty years, and found that they always exhibited the same quality.

Supposed Influences in Slaughtering Cattle and Swine.—One can hardly find a person but thinks the moon responsible for the quality, good or bad, of beef and pork. We are told that. if the animal is killed on the moon's decrease, the meat will shrink very much in cooking, but if killed on the increase, the meat will "swell in the pot." They do not pretend to explain this wonderful phenomenon, but simply say "*it is so.*" This piece of folly was proved to be ridiculous more than a hundred years ago. We are told, also, that animals butchered on the *increase* are *much longer dying* than when butchered on the decrease. The writer has seen this notion

tested many times, and the weight of evidence (?) seemed to be on the other side of the question. The inventor of the thermometer believed that healthy persons gain two pounds at the beginning of every lunar month. His idea was founded on experiments upon himself, but when the same experiments are tried on a considerable number of persons, the whole theory blows away. Probably Sanctorious would have convinced himself to the contrary had he experimented long enough.

It is a prevelant opinion, that more births occur on the decrease than on the increase of the moon. This opinion has been tested by comparing the number of births with the periods of the lunar phases, and it is found that the idea receives new support from the statistics.

Pliny says that eggs should be put to hatch on the new of the moon. Many people think that fowls are more healthy when hatched on the full of the moon. Gireau inclines to the opinion that during the dark nights about new moon the hens sit so undisturbed that they kill their young or check their developement by too much heat; while in moonlight nights, being more restless, this effect is not produced. But I am told by an old lady who has raised poultry, that she has never been able to discover any difference in favor of the new or full moon. Certainly fifty years' experiments by a lady who was willing to discard the popular notions of her time are entitled to our respect.

In conclusion, it appears that of all the lunar influences popularly supposed to be excersised upon the earth, few, if any, have any foundation in fact If the moon thus governs the world, it must be in one of these ways:

First, by her gravity or attraction; *secondly*, by her heat; and *thirdly*, by her light.

With regard to her *attraction*, we say that inasmuch as she produces not the least tidal effect on the atmosphere, she cannot, by her gravity, effect trees, vegetation, persons, animals or disease.

With regard to her *heat*, we say that it does not amount to the thousandth part of a degree, and hence can have no appreciable influence.

With regard to her *light*, we say that it has no more influence than any *other* light, on the same or similar substances.

Silesan Sheep.—*Good Fleeces.*—At a shearing of a portion of the Silesian sheep imported last August, by Chamberlain, Campbell & Ladd, which took place recently at the residence of the first named gentlemen in Red Hook, Dutchess Co., N. Y., the weights of several fleeces, as well as the carcasses from which they were shorn, were noted, and are worthy of being chronicled. The average weight of eight unwashed fleeces, from ewes which had suckled lambs during the winter, was 8lbs. 1 oz. The average weight of the carcasses of the same ewes was about 78 lbs. Considering the fineness of the wool, and its high market value, this is a wonderful, result,—for it will be seen that, after deducting 33¼ per cent. from the fleeces, they will average 5 lbs 6 oz. of clean, merchantable wool. The sheep shorn were not the best of the flock: A five year old buck, shorn at the same time, produced a fleece (of 13 months growth,) weighing 14 lbs. 12 oz.; weight of carcass, 125 lbs Messrs. C., C.& L., say they will cleanse the fleece of this ram, for dollars and cents, in proportion to carcass against any fleece of only 13 months growth, shorn from any rams of any age in America.

THE MILKMAID AND THE BANKER.

A milk maid with a very pretty face,
Who lived at Acton,
Had a black cow, the ugliest in the place,
A crooked-backed one,
A beast as dangerous, too, as she was frightful,
Vicious and spiteful,
And so confirmed a truant, that she bounded
Over the hedges daily, and got pounded.
'Twas all in vain to tie her with a tether,
For then the cow and cord eloped together.

Armed with an oaken bough (what folly!
It should have been of birch, or thorn, or holly,)
Patty, one day, was driving home the beast,
Which had, as usual, slipped its anchor,
When on the road she met a certain banker,
Who stopped to give his eyes a feast
By gazing on her features, crimsoned high
By a long cow-chase in July.

"Are you from Acton, pretty lass?" he cried;
"Yes," with a curtesy, she replied.
"Why then you know the laundress, Sally Wench?"
"She is my cousin, sir, and next door neighbor"
"That's lucky, I've a message for the wench,
Which needs despatch, and you may save my labor.
Give her this kiss, my dear, and say I sent it,
But mind, you owe me one,—I've only lent it."

"She shall know," cried the girl, as she brandish'd her bough,
"Of the loving intentions you bore me;
But as to the kiss, as there's haste, you'll allow
That you'd better run forward, and give it my cow,
For she, at the rate she is scampering now,
Will reach Acton some minutes before me."

Rules for making Butter.—The Massachusetts Committee on Dairies says:—"Your Committee, having had much experience in butter making, offer the following rules as the result of their experience. The newer and sweeter the cream, the sweeter and higher flavored will be the butter. The air must be fresh and pure in the room or cellar where the milk is set. The cream should not remain on the milk over thirty-six hours. Keep the cream in tin pails or stone jars, into which put a spoonful of salt at the beginning, then stir the cream lightly every morning and evening—this will prevent it from moulding or souring. Churn as often as once a week, and as often as circumstances will permit. Upon churning add the cream upon all the milk in the dairy. Use nearly an ounce of salt to a pound of butter. Work the butter over twice, to free it from the buttermilk and brine, before lumping or packing. Be sure that it is entirely free from every particle of buttermilk, and it will keep as long as desired. In Scotland a syphon is sometimes used to separate the milk from the cream, instead of skimming the pans."

Injury to Wheat by Rain.—Mr. John Johnston, near Geneva, N Y., writes us that the loss in wheat in Western New York, by weight, in consequence of the rain, will be from eight to eleven pounds to the bushel, and that the loss by shelling was great. He says "I have no doubt that from 30 to 40 per cent. of all the wheat that was out in the rains, is lost to the farmer. Some of my neighbors have had some new wheat ground, and say it scarcely makes thirty pounds of flour to the bushel, which is worse than I ever knew before."

WEIGHTS AND MEASURES.

In England and America grain is generally rated by the bushel, though it is not the same measure; for here we use the Winchester bushel, which contains 2,150.42 cubic inches; there, since 1826, the legal measure is called the imperial bushel, which contains 2,218 cubic inches; so that 32 of their bushels are about equal to 33 of ours.

The following are the commercial weights of a bushel of different articles, viz: wheat, beans, potatoes and clover seed, 60 pounds; corn, rye flax seed and onions, 56 pounds; corn, on the cob, weighs 70 pounds; buckwheat, 52; barley, 48; hemp seed, 44; timothy seed, 45; castor beans, 46; oats, 35; bran, 20; blue grass seed, 14; salt, 50, according to one account, but Onondaga salt is 56; [the real weight of coarse salt is 85 pounds to the bushel]; dried apples, 24; dried peaches, 33, according to a table lately published in numerous papers, but according to our experience, both are wrong. We have seen thousands of bushels sold at 22 pounds to the bushel which will measure about three pecks.

Heaping Measures.—Potatoes, turnips and esculent roots, apples and other fruits, meal and bran, and in some States oats are sold by heaping measure, which contains 2 815 cubic inches. The size of a Winchester bushel measure, is a circular ring with straight sides 8 inches high and 18½ in diameter. A box 12 inches square, with sides 7 7/8 ½ inches high, will hold half a bushel.

Comparative Grain Measures.—Besides the difference between the Winchester and imperial and heaped bushels, before stated, there are a dozen or more local bushels. For instance, at Abington, Eng., 9 gallons; at Penrith, 16; at Carlisle, 24; at Chester, 32, *et cetera*. In France, the *setier* is as 4.427 to 1.000 compared with the imperial bushel; that is 4,427 bushels. In Holland, the mudde is as 3.157. In Prussia, the *scheffel*, 1.479. In Poland, the *korsee*, 1.451. In Spain, the *fanega* 1.599; that is, 99 thousandths over a bushel and a half.

Barrel Measures.—Rice, 600 pounds; flower 196 pounds; powder, 25 pounds; cider and other liquids, 30 gallons; corn, 5 bushels, shelled. By this latter measure crops are estimated, and corn bought and sold throughout most of the Southern and Western States. At New Orleans, a barrel of corn is a flour barrel full of ears. In some parts of the West, it is common to count a hundred ears for a bushel.

Ton Weight and Ton Measures.—A ton of hay or any coarse, bulky article usually sold by that measure, is twenty gross hundred that is, 2,240 pounds; though in many places that ridiculous old fashion is being done away and 2,000 pounds only counted to a ton.

A ton of timber, if round consists of 40 cubic fee; if square, 54 feet. A tun of wine is 252 gallons.

A Quarter of Corn is the fourth of a ton, or eight imperial bushels. This is an English measure, not in use in this country, though very necessary to be known so as to understand agricultural reports So of several of the following weights and measures:

A Last, of soap, ashes, herring, &c., 12 barrels; of corn 10 quarters; of gunpowder, 24 barrels; of flax or feathers, 1700; of wool 12 sacks.

A Sack of Wool is 22 stone; that is, 14 pounds to the stone, 308 pounds.

A Boll of Wool is the same weight.

A Pack of Wool is 17 stone 2 pounds: 240 pounds, a pack load for a horse.

A Tod of Wool is 2 stone; that is 28 pounds, 6½ tods, 1 wey, and 2 weys a sack.

A Clove of Wool is 7 pounds, or half stone. Recollect, a stone is 14 pounds, when talking of wool feathers, &c.; but when applied to beef, fish and other meats, it is only 8 pounds.

A Truss of Hay, new, 60 pounds, old, 56; of straw, 40 pounds. A load 36 trusses.

A Firkin of Butter is 56 pounds; a tub, 84.

A Scotch Pint contains 105 cubic inches, and is equal to 4 English pints.

A Farlot of Wheat is 21¼ Scotish pints.

Troy Weight and Avoirdupois Weight.—One hundred and forty-four pounds avoirdupois, are equal to 175 pounds Troy; 175 ounces Troy are equal to 192 ounces avoirdupois. All precious metals are bought and sold by Troy weight.

The Kilo-gramme, of France, is 1,000 grammes, and equal to 2 pounds, 2 ounces, 4 grains, avoirdupois.

A Chaldron of Coal, is 58⅔ cubic feet, generally estimated 36 bushels. A bushel of anthracite coal weighs 80 pounds, which makes the weight of a chaldron, 2,880.

Weights of a Cubic Foot.—Of sand or loose earth, 95 pounds; compact soil, 124; strong or clayey soil 127; pure clay, 135; mixture of stones and clay, 160; masonry of stone, 205; brick 125; cast iron, 450; steel, 489; copper, 486; lead, 709; silver, 654; gold, 1 203; platina. 1,218; glass, 180; water, 62; tallow, 59; cork, 15; oak timber, 73; mahogany, 66; air 0.0753. In the above fractions are discarded.

A Bale in Cotton, in Egypt, is 90 pounds; in America a commercial bale is 400 pounds, but is put up in different States, varying from 280 to 720 pounds. Sea-Island Cotton is put up in sacks of 300 pounds.

A Bale of Hay, is 300 pounds.

A Cord of Wood, is 128 solid feet, usually put up 8 feet long, 4 feet wide, and 4 high. In France, a cord of wood is 576 feet.

A Stack of Wood, is 108 solid feet; 12 feet long 3 high, and 3 wide. A skid of wood is a round bundle of small sticks, 4 feet long, girting for a one-notch, 16 inches, two notch, 23 inches; three-notch, 28 inches; four notch, 33 inches; five-notch, 38 inches. A billet of wood is similar to a skid, being 3 feet long, 7, 10, and 14 inches round. They are sold by the score or hundred. A score is 20 in number.

Faggots are bundles of brush 3 feet long and 2 feet round. A load of faggots is 50 such bundles. A *quintal* of wood is 100 pounds. All fuel should be sold by the pound.

A Perch of Stone is 25 cubic feet, piled, or 22 in the wall.

Lime and Sand to a perch of stone. Three pecks of lime, and two-thirds of a one horse cart load of sand.

Weight of Lime. A bushel of limestone weighs 142 pounds; after it is burned if weighed directly from the kiln, 75 pounds; showing that 67 pounds of carbonic acid and water have been driven off by fire. This bushel of lime will absorb 20 pounds of water, gradually applied during several days, and will then be in a state of dry powder, weighing 93 pounds; showing that 18 pounds of water have been converted into a solid, dry substance.

To Measure a Ton of Hay.—One hundred cubic feet of hay in a solid mow or stack, will weigh a ton.

To Measure Cattle to Compute Weight.—Ascertain the girth back of the shoulders, and the length along the back, from the square of the buttock, to a point even with the point of the shoulder blade; say the girth is 6 feet 4 inches, and the length, 5 feet 3 inches, which, multiplied together gives 31 feet. Multiply this by 23, the number of pounds allowed to the foot, between 5 and 7 feet girth, and the result is 713 pounds, for the number of pounds of beef in the four quarters. Girths from 7 to 9 feet allow 31 pounds to the foot. Cattle must be fat and square built to hold out weight.

To Measure Grain in Bins, multiply the length and width together; and that product by the height in cubic inches, and divide by 2.150 and you have the number of bushels.

To Measure Corn in the Ear, find the cubic inches as above, and divided by 2.815, the cubic inches in a heaped bushel, and take two-thirds of the quotient for the number of bushels of shelled corn This is upon the rule of giving three heaping half bushels of ears to make a bushel of grain. Some falls short and some overruns this measure.

Board Measure.—Boards are sold by face measure Multiply the width in inches of any number of pieces of equal length, by the inches of the length. Divide by 149, and the quotient is the number of feet, for any thickness under an inch. Every fourth inch increase of thickness, adds a fourth to the number of feet in the face measure.

Land Measure.—Every farmer should have a rod measure, a light, stiff pole, just 16½ feet long, for measuring land. By a little practice he can learn to step just a rod at five steps, which will answer very well for ordinary farm work. Ascertain the number of rods in width and length of any lot you wish to measure, and multiply one into the other, and divide by 160 and you have the number of acres, as 160 square yards make a square acre. If you wish to lay off one acre square, measure 13 rods upon each side This lacks one rod of being full measure.

U.S. Government Land Measure.—A township is 6 miles square, and contains 36 sections, 23,040 acres. A section, one mile square, 640 acres. A quarter section, half a mile square, 160 acres. As this is 160 rods square, a strip one rod wide or every rod in width is an acre. A half quarter section, is half mile long, north and south, almost universally, and a fourth of a mile wide, 80 acres. A quarter-quarter section, is one fourth of a mile square, 40 acres, and is the smallest sized tract, except fractions, ever sold by the government. The price is $1·25 an acre.

Measure of a Mile.—While engaged in the compilation of this valuable article, we received the following table from a friend in Maine, who, in remarking upon the indisposition of some persons to take an agricultural paper, "because" they say "it pertains to the system of book farming," says some object to take *The Plow* because "*they cant afford it.*" We are sorry for their poverty, but more so for their ignorance, and stupid determination to remain in it. This single article which is less than the fiftieth part of what we give them for fifty cents, would cost any one of them fifty times the price of *The Plow*, in labor, to glean this information from fifty dollars worth of books. Our measure of distance is by the standard English mile, which is 5,280 feet in length, or 1,760 yards, or 320 rods.

An English geographical mile, is equal to 2,025 yards.

Ancient Scottish mile,	1	mile	224 yds.	English.
Ancient Irish mile,	1	"	480	"
German short mile,	3	"	1579	"
German long mile,	5	"	1326	"
Hanoverian mile,	6	"	999	"
Tuscan mile,	1	"	48	"
Russian mile,	4	"	1197	"
Danish mile,	4	"	1204	"
Dantzic mile,	4	"	1435	"
Hungarian mile,	5	"	313	"
Swiss mile,	5	"	353	"
Swedish mile,	6	"	1140	"
Arabian mile,	1	"	380	"

Modern Roman mile 132 yards less than English.

LENGTH OF LEAGUES.

French posting league,	2	"	743	"
French league,	3			
English league,	3			
Spanish judicial league,	2	"	1115	"
Portugal league,	3	"	1480	"
Flanders league,	3	"	1584	"
Spanish common league,	5	"	376	"

LENGTH OF OTHER MEASURES.

Persian Parasang,	3	"	806	"
Russian Werst,	6	"	593	"
Turkish Bein,	1	"	66	"

A German geographical mile is equal to 4 English miles or 8100 yards.

SCRIPTURE MEASURES.

"A Sabbath's Day's Journey" is 1.155 yards—about two-thirds of a mile. A *day's journey* is 33¼ miles. A *reed* is 10 feet, 11½ inches. A *palm* is 3 inches. A *fathom* is 6 feet. A *Greek foot* is 12½ inches. A *Hebrew foot* is 1.212 English foot. A *cubit* is 2 feet. A *great cubit* is 11 feet. An *Egyptian cubit* is 21.888 inches. A *span* is 10.944 inches.

As the superfices of all our States and Counties are expressed in square miles, it should be borne in mind that the contents of a mile is 640 acres.

Number of Square Yards in an Acre.—English 4,840; Scotch, 6,150; Irish. 7,840; Hamburgh, 11,545; Amsterdam, 9.722; Dantzic, 6,650; France, [hectare,] 11.960; Prussia, [morgen,] 3,053.

Manure Measure.—This is generally estimated by the load, which is about as definite as the phrase about as big as a piece of chalk. It ought to be measured by the cubic yard or cord. A *cubic yard* is 27 cubic feet, each of which contains 1,728 cubic inches. A *cubic cord* is 128 cubic feet. As the most of farmers have an idea in their minds of the size of a pile of wood containing a cord, they would readily compare that with the quantity of manure if stated in cords. Every cart or waggon box, before it leaves the maker's shop, ought to have the cubic feet and inches it will contain indellibly marked upon it. This would enable the owner who has read *The Plow*, to calculate the amount of his load of grain, roots, earth, stone or manure.

Weight of Manure.—A solid foot of half rotten stable manure, will weigh, upon an average, 56 pounds. If it is coarse or dry, it will average 48 pounds to the foot. A load of manure, or 36 cubic feet, of first quality, will weigh 2,016 pounds; of second quality, 1,728 pounds. Weight to the acre Eight loads of first kind, weighing 16,128 pounds will give 108 pounds to each square rod, and less than two and a half pounds to each square foot. Five loads will give 63 pounds to the rod. An acre con-

taining 43,560 square feet, the calculation of pounds per foot, of any quantity per acre is easily made.

THE MEASURE OF MIND.—May be considerably ex panded in every youth who will carefully study these pages, which we have prepared with a measure of labor especially for the benefit of all who measure the capacity of our intellect to give useful information by our monthy chronicle of matters calculated or at least intended to elevate the minds of our read ers immeasurably above those who are still groping in the darkness of wilful ignorance, because of their misjudged economy in not patronising agricultural papers and schools.—*The Plow.*

THE MONTHS—OCTOBER.

"What though the chill and frosty morn
Late of its fair proportion shorn;
The hasty twilight, that bereaves
Of their full length the darkening eves;
The length'ning nights, that now assume
More than their equal share of gloom,
Mind us of charms, alas! gone by,
And haply wake a longing sigh:
Yet much, when once is spent and past
The tempest's equinoctial blast,
While yet the radiant noons retain
Signs of fair Autumn's mellow reign,
Ere yet the deep'ning shadows near
Of dark November's form appear:
With much is calm OCTOBER fraught
To prompt the sadly pleasing thought;
With much amusement to dispense,
And pleasure to the admiring sense;
With much, enjoyment's better past,
To store the mind and warm the heart;
If objects, which the sense amuse,
Give cause for more exalted views;
And forms of earth be made to bear
Stamps of a heavenly character."

MANT'S BRITISH MONTHS.

The name of this month comes from the Latin, without change, and signifies the eighth month, reckoning from March. The Saxons called it *Wynamonat*, that is, Wine-month, as being the period for gathering the vintage; and also *Winter Fyllyth*, from the near approach of that season. It was dedicated by the Romans to Mars. In old pictures it is represented by a man sowing grain; but, in more modern ones, by a man with a basket of chesnuts, and clothed in a mantle of the colour of the decaying leaf, which, at this period, begins to strew the earth and clothe it in a sad coloured garment. The Scorpion is the sign which the sun enters on the 23rd of this month.

The glory of summer has now passed away, Autumn is fast drawing to a close, and stern winter with frosts and snows, is about making his advent. Notwithstanding, the present month is often as pleasant and agreeable as any of the year, the gloom of whose decline is often enlivened by the variety of rich bright colours exhibited by the fading leaves of shrubs and trees. So varied and glowing, indeed, are the tints, so harmonious their combinations, so exquisitely tender and soothing the emotions that they give birth to, as to render our autumnal scenery, both to the painter and the man of sentiment, more interesting even than the blossoms of spring and the radiance and verdure of summer.

"These virgin leaves of purest vivid green,
Which charm'd ere yet they trembled on the trees,
Now cheer the sober landscape in decay:
The lime, first fading; and the golden birch,
With bark of silver hue; the moss-grown oak,
Tenacious of its leaves of russet brown;
Th' ensanguined dogwood; and a thousand tints
Which Flora, dressed in all her pride of bloom,
Could scarcely equal, decorate the groves."

The fall of the leaf, so peculiarly characteristic of October, has always been a favourite theme with the poet and moralist, as illustrative of the changeableness of human life. "We all do fade as a leaf," is a solemn fact, of which we are annually reminded by the changing foliage of autumn. Our Canadian woods, comprising so great a variety of trees, many of them of gigantic dimensions, are peculiarly beautiful and diversified under a clear, blue, autumnal sky, and afford, perhaps, the most captivating and impressive sight throughout the whole year. The richly-diversified tints and hues of forest trees, at this season, give an air of grandeur to the landscape which is altogether unrivalled; and yet, accompanied as it is, and must be, with the thoughts of decay and approaching desolation, the scenery of autumn generally inspires the observer with pensive emotions, approaching to sadness. It has been well remarked that "the fall of the leaf indicates, not the death, but the life of the tree." Were the tree dead, the leaves would all adhere to the branches, and it would be more difficult to remove them than in the case of a living tree; but in the natural fall of the leaf, the sap retreats to the root, and, by the condition of its vessels, produces that remarkable change which is so especially characteristic of the present season. In the removal of trees and plants, therefore, (for which this month, in many cases, affords a convenient season,) the cultivator may anticipate the best results from such trees as shed their leaves soon after their removal; the sap has probably retreated to the root, and will put forth again with renewed energy in the ensuing spring. The tree on which the shrivelled leaves remain long and cling closely, is, probably, dead.

"The chief business of nature at this season, as

far as concerns the vegetable world, appears to be *dissemination*. Plants have gone through the progressive changes of springing, flowering, and seeding—have at length brought to maturity the rudiments of a future progeny, which are now to be deposited in the fostering bosom of the earth. This being performed, the parent vegetable, if of the *herbaceous* kind, either totally perishes, or dies down to the root; if a *tree* or *shrub*, it casts off all those tender leaves that the spring and summer had put forth. Seeds are scattered by the hand of nature in various manners. Those of them which are furnished with plumes, or wings, are dispersed far and wide by the high winds which rise about this time. Hence plants with such seeds are, of all others, the most generally to be met with—as dandelion, groundsel, thistles, &c. Others, by means of hooks with which they are furnished, lay hold of passing animals, and are thus carried to distant places. The common burs are examples of this contrivance. Several, when ripe, are thrown out with considerable force from their receptacle, by means of a strong spiral elastic spring, of which the *impatiens*, or touch-me-not, and all the species of *cardamine*, or cuckoo-flower, are instances. Many are contained in berries, which, being eaten by birds, the seeds are discharged again uninjured, and grow wherever they happen to light. Thus has nature carefully provided for the propagation and wide distribution of her vegetable offspring."

Field sports are now attracting the inhabitants, both of town and country; and the pursuit is generally followed with much earnestness and zest. In the old country, Partridge shooting commenced last month; and the first of October witnesses a large destruction of that beautiful and delicate bird—the Pheasant. Hare-hunting is usually a little later; and Fox-hunting begins about the middle of the month.

Valid objections, chiefly of a moral nature, may undoubtedly be urged against the immoderate pursuit of field sports. When they engross too intensely the attention, their tendency is to occupy much of the time which should properly be devoted to the more serious and important duties of life, and the purposes of mental and social improvement. There is, too, some danger of the moral sensibilities becoming blunted; although we are not of those who would prefer indiscriminately the serious charge of inhumanity against field-sports generally. When pursued in moderation, they tend to strengthen the powers of the body, without necessarily hardening the heart. In the zeal for destruction which seems to pervade more or less all ranks and classes of society at this particular period of the year, it may seem out of place to speak not of the usefulness of the animals which, for the special object of the pursuit, or to offer a recommendation in their behalf, that the war against the species may be regulated, and kept within due bounds, so that man may not reduce their numbers to his own injury. In the case of the partridge, as well as in that of many other birds, it is fully believed that if we understand their habits aright, we should often be disposed to cherish that which we are now zealous to destroy. This has been found to be the case with that useful bird, the Rook, in several countries of the old world. Wherever rooks have been indiscriminately destroyed, the farmers have been sure to suffer more than before from certain kinds of insect-depredators.

The farmer has, ere this month commences, committed his seed-wheat to the ground. There are few objects more characteristically rural, we might perhaps say more pleasing and suggestive than the sower going forth to sow. Modern improvements in machinery have in this, as in numerous other instances, materially changed the mode of this indispensible operation, and in some degree diminished its associative poetic power. Still, in whatever manner the sowing of grain may be performed,—upon the ultimate result of which the very existence of countless millions depends,—we learn to comprehend and to cherish one of the most important of all truths, that the wise and beneficent Author of Nature carries on the government not only of the physical, but also the moral world, by immutable laws, expressly adapted in each case to the wants and condition of all things. How calculated is the sower, as he scatters the seed on the furrows, well prepared and manured for the purpose,—to remind us of the intimate, aye the indissoluble, connection between reaping and sowing, not only in reference to the material world, but also to the mind and heart. "Whatsoever a man soweth, that he shall also reap," involves an unchanging principle of universal application; and he is the truly wise who profits by its proper application.

The agricultural year is now fast drawing to a close,—root crops are what the farmer has to gather in; active preparations have to be made for sustaining the domesticated animals during winter. Our grain harvest has been generally abundant; and mostly secured in a favourable condition; and

our hearts should be deeply imbued with gratitude to God for the large measure of peace and prosperity with which this highly favoured Province is blessed. *B.*

Horticulture.

London Currants.—A writer in the *Horticulturist* speaks of the fine currants of the market gardens near London, which are grown in the following manner.—They are planted in rows twenty or thirty feet apart, and three or four feet apart in the rows; the ground, which is naturally good, is highly manured, and cropped between with vegetables. When the plants commence bearing, they are pruned very hard; the greater part of the young wood is thinned out, and what is allowed to remain is shortened back to three or four inches. By this means the trees are always kept short, never attaining a greater height than two or three feet. These strong manured and well-pruned trees produce magnificent fruit, and in great abundance, well remunerating the market gardener for all his trouble.

To Prevent Fruit Trees from Splitting.—For preventing forked fruit trees from splitting under their weight of fruit, Isaac Lewis, of Hopkinsville, Kentucky, has given us his plan. "My plan," he writes, "which I have followed for thirty years, is this: When I find a forked tree that is likely to split, I look for a small limb on each fork, and clean them of leaves and lateral branches for most of their length. I then carefully bring them together and wind them round each other from one main branch to the other. In twelve months they will have united, and in two years the ends can be cut off. The brace will grow as fast as any other part of the tree, and is a perfect security from splitting. I have them now of all sizes, and I scarcely ever knew one fail to grow."

Hints for Gardeners.—All growers of raspberries, gooseberries, blackberries, currants, &c., can secure their bushes against disease and unproductiveness, by *mulching the roots well.* Any old trash in the garden answers for this purpose—such as weeds, grass, leaves, and the scrapings from the avenues. It acts as an exterminator of weeds—as a cooler and moistener of the soil—and as the *best manure*, when it rots, that can possibly be applied. We never knew a gooseberry bush that had been properly thinned out, and not bound up too closely, shewing *mildewed fruit*, or that did not bear abundantly every year. These mulchings should be applied three times in the season—in the spring, in midsummer, and late in the fall. It should also be remembered, as it respects raspberries, that any grubbing or digging about their roots should be carefully avoided. In nearly if not quite every instance where we have disturbed the roots of the raspberry, the stalks either perished over winter, or were so much injured as to be next to worthless the following season.—*Germantown Telegraph.*

PLANTING TREES.

Many are deterred from planting trees by the thought that they will not live to see them sufficiently grown for any useful or ornamental purpose. H. F. French, Esq., in the *New-England Farmer* remarks :

If I could assemble all the boys of New England together in this old village, and show them the trees that my own hands have planted and assisted others in planting, no doubt a score of years would witness such an improvement in the streets of our town as no mere talking or writing can accomplish. Twenty-five years ago or thereabouts, the old Lombardy poplars which had been planted about the paternal mansion when it was built, in the first years of the century, were decayed so as no longer to be an ornament and were cut down. There stood the tall, white three-story house close to the street, with only a few lilacs and roses to shelter it. Now, as you approach the mansion on either side, no glimpse of it, except of a chimney top, or of a window or door, where the branches have been cut away, can be seen. The rock maples and horse chesnuts and elms have interlaced their boughs and lifted their heads so as completely to shelter it. A quarter of a century has sufficed to increase the tree which a boy would carry on his shoulder to a foot or more in diameter. Yesterday I fixed a swing for my children upon a chesnut which grew from a nut which I saw my father plant in the garden, and which I transplanted to its present place some twenty years age. The street is lined for half a mile with elms and maples which we boys of the village with our own hands dug from the rocky soil of the forests and planted. Now they are the beauty and glory of the place.

Gas Tar and Garden Insects.—Gas tar may yet amount to something.—Its unpleasant odour seems to keep away all insects from garden crops. Galignani's Messenger says :

"A French gardener, whose frames and hot houses required painting, decided on making them black, as likely to attract the heat better, and from a principl of economy he made use of gas tar instead of black paint. The work was performed during the winter, and on the approach of spring the gardener was surprised to find that all the spiders and insects which usually infested his hot house had disappeared, and also that a vine, which for the last two years had so fallen off that he had intended to replace it by another, had acquired fresh force and vigor, and gave every sign of producing a large crop of grapes He aferwards used the same substance to the posts and trellis work which supported the tiers in the open air and met with the same results. All the caterpillars and other insects completely disappeared. It is said that similar experiments have been made in some of the vineyards in the Gironde with similar results."

Melon Bugs—The Maine Farmer has the following :—"Reader, are you ever troubled with that terrible pest, the melon or squash bug? You need not be. Get 4 lbs. quassia chips and pour four gallons of boiling water over them in the barrel. Cover to keep in steam and stand 12 hours; then fill the barrel and water daily. Bugs don't like bitters."—The Bangor Whig endorses the above, and adds :—"A friend here guarantees the correctness of the statement, and informs us that an occasional application of the decoction, say one a week, to his rose bushes, has enabled him, for two seasons, to preserve their foliage from the insects which infest them. It will operate both as prevention and cure."

WHALE OIL SOAP FOR INSECTS.—Both last season and the present, we have been much annoyed by the rose-slug, which was so plenty as to totally destroy the foliage on several kinds of roses. We tried common soap-suds, tobacco water, and fumigation with tobacco, to no purpose. We could kill the aphis and all other insects on the shrubs, except the slug. That would live in a strong infuson of tobacco for hours, and then, on being restored to the rose-bushes, would pursue its instinctive course as if no thing had occurred. At last whale oil soap was tried. This finished them quickly. The proper quantity is two ounces dissolved in a gallon of water, to be applied with a syringe, taking care to have the liquid strike the under side of the leaves, where the slugs generally keep themselves. A friend who has tried this kind of soap on some very fine roses on which the slug had made its appearance, reports the same success, there not being an insect to be found on the shrubs at this time.

MELON APPLE.—A late number of the Hort'culturist has a beautiful cut of this apple, which is now obtaining so great celebrity in New York and the East We have never seen but a single specimen of the apple.—About nine years ago a friend, returning from Central New York, brought us some specimens of different varieties of fruit, and among them some Northern Spys, over which he seemed to desire us to be much elated.—After tasting these, we came upon a rich, red, good sized, symmetrical one which seemed to us to excel any apple we had ever eaten. On enquiring the name of it, we were told it was a new variety called the "Melon" apple. We have never forgotten that fruit, and are not surprised at the celebrity it is now obtaining. Judging by that specimen it is as much superior to the Northern Spy as the Spy is to a cucumber. True, further acquaintance with it might modify our opinion of it somewhat; but we are ready to say of it, as we have said of single good speeches, that the man who could make one such ought to be able to make one more.—*Prairie Farmer.*

CUCUMBER SEED.—Some people do not know how to cleanse the cucumber seeds which they save from their own gardens.—They cut the cucmbers open, dry them and dig out the seed with the dried mucilage adhering to the seeds A better way is—when the cucumbers are ripe, cut them open and scrape out the seed, with all the mucilage, into an iron vessel large enough to contain them. Put water into the vessel and set it in a place moderately warm. In a few hours fermentation will take place, that will collect all the mucilage together on the top of the water, leaving the sound and heavy seeds to sink clean at the bottom. Pour off the water with the thick stuff at the top, and then you have the seeds clean. Put them where they will dry, and then lay away till next spring.

HEALING PAINT FOR DECAYED BRANCHES, OR SNAGS, IN FOREST AND OTHER TREES. Dissolve two ounces of corrosive sublimate in spirits of wine and mix with three pints of best tar. The decayed parts to be pared off or gouged out below the level of the surrounding sonnd bark, and the wound well painted over with the above. All limbs that require removal shou'd be cut off close to the trunk, or larger branch, and treated in the same way.—*Gard. Chron.*

RAILROAD CAKE.—One cup of white sugar, one cup of flour, two tablespoonfuls of melted butter, three eggs, one teaspoonful of lemon essence. All ingredients stirred in together, and baked in a long narrow tin.

Communications.

USEFUL ASSISTANCE OF CHEMISTRY TO THE FARMER.

[CONCLUDED.]

In every plant, and in especial abundance in the parts of plants most valued for food, in the seeds of the cereal and leguminous (the grain and podded) crops; and in the roots of the turnip, the potato, and the carrot, we find another gas which disappears when the plant is burned. Its presence gives peculiar properties to the parts in which it is found. It is named nitrogen; and, like oxigen, is one of the chief constituents of the atmosphere; but though forming the great bulk of the air, it is distinguished rather by the want of the properties possessed by its other constituents, than by any characters of its own. It differs from hydrogen by not being inflammable; and, unlike oxygen, it is incapable of supporting flame. It forms four-fifths of air; and is, therefore, constantly presented to plants; and we have reason to believe that it is not taken by plants directly from the atmosphere; but that they procure it from certain compounds which it forms and especially from a gas termed ammonia, which is a compound of fourteen parts of nitrogen, with three of hydrogen. Ammonia is invariably diffused through the air; and though, like the gases of which it is composed, is invisible, it has both smell and taste; and its pungent odour is familiar. It is thi pungent gas that effects the eyes in the ill-ventilated stable; and it is also given off together with carbonic acid, wherever animal and vegetable matters decay. Ammonia dissolves readily in water; and a strong solution of it forms the hartshorn of the apothecary. It may be procured by heating together quick-lime and one of its compounds, sal-ammonia. We have reason to believe that it is from ammonia that the plant receives the nitrogen it requires. Evolved in the soil during the decay of manure and of the dead roots of plants, it accelerates vegetation; and by enabling our crops to procure it by artificial means, we increase their development, and cause them to afford us a larger amount of those nutritious compounds, upon which their value as food depends.

Such are the substances which chemistry shows us compose that large portion of a plant that disappears into the air when it is burned. Originally derived from air and watery vapour, heat merely breaks up the compounds in which they had for a

time been united. They but assume their primitive forms, and ascend into the air to be brought down in the shower, and to constitute materials for new tribes of plants. Thus the carbon of the cargoes of fuel consumed in cities, and that given out from the lungs of their inhabitants, and the ammonia which escapes from the smoking manure-heaps of the careless farmer, are made to contribute to the general vegetation of the country. In every plant that has been examined there is found, in addition to the portion composed of the substance we have been considering, a small quantity of incombustible ash. This ash, in the infancy of science, when observed, was imagined to be merely an accidental impurity, and without influence on the growth of the plant. Its proportion is very small, varying from one-half per cent. to ten or twelve per cent. of the weight of the dried plant. But modern investigation has shown that the four or five pounds of ashes that are left upon burning a ton of the wood of the oak are as essential to the life and health of the tree, as the materials that escape into the air. The celebrated Davy seems to have had some faint idea of the importance of these earthy matters to the plant; but it was reserved for that great philosopher, whose writings have done so much to direct the attention of all classes to the application of science to agriculture, Baron Liebeg, to point out their true importance. It is now acknowledged that the matter which is left upon burning a plant, is essential to the existence of the plant; and though all the elements contained in its combustible part were supplied, it would, without the matter of the ash, be impossible for it to come to perfection.

An examination of the bodies of animals shows us the necessity of this arrangement; and if it were possible that the seed could vegetate and grow into the perfect plant, without extracting from the soil these matters, it would be useless to us for food. The incombustible, like the combustible part of plants, is composed not of one, but of several kinds of matter. When the ash, for example, which is left when the bulb or the tops of the turnip are burned, is examined by the means which chemistry enables us to employ, it is found to consist of at least ten different substances. Some of these substances are well known, as they are of great commercial importance, and generally made use of in the manufactures of this industrious province. Thus we find in the ash of the turnip a considerable amount of the substances—potash and soda; the former of which exists in the potashes, and the latter in the soda ash and barilla of bleachers. It also contains the white substance, magnesia, which is met with in the shop of the apothecary, the well-known substance, lime, which is so highly valued as a manure by farmers, and the compound of iron, which gives the red colour to the soils formed by the crumbling down of trap. We also discover in it, chlorine, the active ingredient of bleaching liquor, and sulphuric acid, the oil of vitriol of the bleach green, and also another sour substance, called phosphoric acid, which is formed when a common lucifer match is burned, by the union of the once rare, but now well-known waxy-looking substance, phosphorous, with the oxygen of the air. It also contains silica, the earthy matter which forms the bulk of sand. The earthy, incombustible ingredients are only ten in number; and, in the combustible part, we have seen that only four substances are discovered; and yet out of these fourteen substances every plant, the poisonous hemlock, as well as the nutritious grain; the fragrant rose-tree, as well as the stinking garlic, procure their materials. In the hand of nature these materials are plastic beyond anything that we can conceive; by a simple change in the arrangement of two or three elements, an oil, which is a deadly poison, is converted into an innocent drug; and, as is every day performed in the sprouting seed, an insoluble and tasteless starch, converted into a soluble sugar. It is from the soil, in which the seed expands into the plant, that it must produce all the substances that we discover in its ash. Here, then, the connection between the plant and the soil, is as close as between it and the air. But there is an important difference to the practical farmer. In the atmosphere, the store of carbonic acid, water, and ammonia, it is inexhaustible; and it is the same at all times and in every country. A thousand agencies are at work, maintaining its purity, and securing the uniformity of its composition; but it is not so with the soil. If we examine the soil from one of our fields in the same manner that we examine the plants that grow upon it, we find upon burning it, that only a small portion is consumed, and that a large amount of incombustible matter remains. This matter, like the ash of the plant, is found to consist of several ingredients; but does not always contain the same number of substances; and its character is found to differ widely in different parts of the same country; and even in fields lying in the same neighbourhood. If we cast our eyes over a geological map, we will perceive that different parts of the country are shaded by different colours, which are used to mark the different kinds of rocks which prevail in them

The farmer cannot have travelled beyond his own neighbourhood without having his attention attracted by the great variety in texture and appearance, presented by the rocks exposed to view in the cuttings of the public roads. These rocks do not differ more widely in appearance than in chemical composition.

The soil which the farmer ploughs, has originally been produced either by the crumbling down of the bed of rock upon which it rests, or by the fragments of rocks carried by water from some distance. It therefore requires no argument to convince us that the character of the earthy matter which a soil yields, when it is burned, must depend upon the kind of rock from which it has been derived; and we can conceive how a soil formed by the crumbling down of a granite rock may contain potash and the other ingredients of granite, and be deficient in lime. Thus experience shows us that the decay of a basaltic rock affords a rich loam, containing a considerable amount of iron, while granite soils are deficient in several of the most important ingredients of plants. It is necessary for the progress of rational agriculture that farmers should be enabled to judge of the composition of rocks and soils. The rocks are the great storehouse in which nature has locked up materials for the nourishment of the vegetable tribes and the support of our bodies. To the farmer is entrusted the task of unlocking their treasures; and, by his mechanical operations, he facilitates their conversion into food. If every soil contained the inorganic materials which plants require, and in sufficient quantity, his task would be comparatively easy; but soils, we have seen, must differ, as the rocks from which they are derived differ; and must, therefore, exercise an unlike influence upon plants.

If we look at the chemical inventory of the stock of materials usually found in a fertile soil, compared with that of another which had been found unproductive, we find that, while the first contains a sufficient supply of all the materials required for the support of plants, the second exhibits merely traces of several of them; so that they must be supplied by art. But not only do the soils of different parts of a country differ in chemical composition, the clay slate soils of one district from the basalt and limestone soils of another; but the experience of centuries has taught the farmer that soils naturally fertile, stored with every thing that plants require, may be deprived of their fertilizing materials, and rendered incapable of yielding a profitable return for the labour of the husbandman. Every plant that we cultivate takes away a certain quantity of the matters which have been described; and as these materials are not found in equal proportions in all soils, it is clear that some of them must in a few years be totally carried away in the crops which the farmer sends to market; and this is precisely the condition of much of the soil in portions of this country at the present time; rich in some of the materials of plants, but deficient in others; and, therefore, without artificial assistance, without what are called manures incapable of yielding crops. It is not sufficient that the soil contains one or two of the substances that we discover in the ash of the plant; they must all be there, and in proper quantity, or it will not flourish. The great object of modern agriculture is, to enable the farmer economically to supply, by art, the materials in which his fields are naturally deficient, or which, in the course of cultivation, have been removed from them in his crops; and it is in this department that chemistry is qualified to give the farmer most useful assistance. It studies for him the composition of the crops he desires to cultivate; and shows him the substances which his fields must contain to produce them. It can guard him from fraudulent imposition in the purchase of these substances, or point out to him, in his own neighbourhood, lying at his own doors, materials which may with advantage be substituted for the fertilizers of the manure market, and the manures which are at present brought, at so great an expense, from other countries. J. F. H.

Pine Grove, 18th August, 1855.

Scientific.

PRACTICE OF SHOEING HORSES.

Mr. Chas. Percival, veterinary surgeon of the Royal Artillery, furnishes the following communication to one of the Dublin papers:

I have lately been devoting much attention to shoeing, and flatter myself that the horses under my care, are as well shod as any in her Majesty's service.

The shoe I found in use here was made concave next to the foot, and flat on the ground surface, than which, in my opinion, nothing could be worse. This shoe I have had reversed, making the latter as concave as the foot will possibly admit of, leaving only sufficient room between the shoe and the foot, for the pricker to pass freely round, to remove dirt, &c. To the heels of the shoe I have given an inclined plane outwards on the foot surface, with three nails on the inside and four on the outside. The heels, instead of being cut off straight are well sloped

and about the same thickness as the toe. The shoe one-third as thick at the heel as the toe, recommended by the late professor, the majority of our horses could not travel in. There are many pernicious practices which smiths in general, if left to themselves fall into, viz:

1. Mutilating the frogs by improper cutting. I have at length got my farriers to understand that the only part of the frog which ever requires cutting, unless ragged, is the point, to prevent the sensible frog being bruised between it and the coffin bone.

2. Inflicting serious injury to the crust by improper use of the rasp, but especially the coarse side of it.

3. In fitting the shoes, by cutting too much out of the crust at the top to admit the clip. The shoe is consequently set too far back, instead of being fitted full to the crust, and afterwards rasping away the crust, making the foot, in fact, to fit the shoe instead of the shoe to fit the foot. This is a faulty practice and very seriously so, which smiths in general are very apt to fall into; one. too, which renders the crust shelly, for that part into which the nails are driven from time to time is in this way rendered weak.

4. In turning shoes, smiths in general do not attend sufficiently to bevelling or sloping the edge of the shoe from the foot to the ground surface, which I consider of great importance, especially if horses are given to cut or interfere in their action.

5. Cutting the heels of the shoe off straight. This is another bad practice. If well sloped, like a shoe for hunting, to which there cannot be any objection they are less liable to be pulled off by the hind shoe catching in them, and contribute more to the safety of both horse and rider.

6. Leaving the inner edges of the hind shoes at the toe sharp, which, if rounded, will in a great measure prevent over-reaches, as well as render the fore shoes less liable to be pulled off by their catching in the heels of the former. Squaring the toe of the hind shoe for horses that forge, or "carry the hammer and pinchers," as it is termed, leaving the horn projecting over the shoe, is in my opinion, good as a general rule, not only preventing that unpleasant noise, but rendering horses less liable to overreach and pull off their fore shoes, provided, however, attention be paid to the rounding the inner edge.

7. In rasping the under part of the clinches, farriers are very apt to apply the edge of the rasp improperly to the crust, forming a deep groove round the same, which cannot but be injurious to the foot and, together with taking away two much of the crust in finishing off the foot. must have a a tendency to render it shelly. Curving the shoe at the toe after the French fashion, where horses go near the ground, I am very fond of; but I cannot see any advantage in it as a general practice.

Remarks.—We hope every shoer of horses who reads this, will compare its suggestions with his practice. As is the case with most of the mechanics of this country, there is only one in a hundred that understands his business. It requires *art*, to shoe a horse properly, as to make a watch. There are important principles involved in the operation which the smith should study and understand. We believe there are more horses led into shambling gaits, and awkward over-reaching and stumbling habits, by bad shoeing, than by all other causes combined. And when the horse has acquired these habits, he is check-reined, martingaled, and abused in other abominable ways, because he does just has his owner ought to know he would do under such a course of shoeing!

THE WINDS.

The New York *Tribune* in its report of the meeting at Providence of the American Association for the advancement of Science. gives the following synopsis of a paper read by Capt. Wilkes, U. S.N., on the subject of winds :

Capt. Wilkes approached this subject with diffidence, as the theory of storms is very old. There is found to be a belt of heated water running around the world. The equator of heat lies mostly north of the Equator, dipping only once south of the Equator for a few degrees in the centre of the Pacific Temperature is the great destroyer of the equilibrium of the atmosphere. Franklin first discovered that a northwest storm began at the south-west. Trade-winds have no connection with the rotary motion of the earth. Under the Equator we find winds blowing from the west. Take the world over, there is more west wind than from the east. The south-east trade winds are entirely different from those of the north. Trade-winds never flow home to the land—calms or monsoons intervene. In the Pacific the trade winds are much more irregular than in the Atlantic. The heated belt of water, the heated deserts, and the heated mass of water in the centre of the Pacific, are the causes of trade winds. All of them rush toward the heated areas. The circulation of the atmosphere is not between the Equator and Poles, but between the upper and lower regions of the atmosphere. When the trade winds pass the Andes they make a leap of 300 or 400 miles before touching the sea again, and in that space are the monsoons. When the sun is vertical the trade winds are fitful and equally, and regular as the monsoons are. The land and the sea breezes are the illustration of all winds, and even of storms. Cold air will go to the warm, and never the warm to the cold. No return current was noted at the top of Mannahoa. The earth does not slip away from its atmosphere, as metereologists suppose. This is shown by the ascent of aeronauts. Here he proved to the satisfaction of all doubters that the winds are not caused by the inertia of the atmosphere. letting the earth slip past it, which, if it made the wind would make it blow 1,000 miles an hour. There are no rain bearing winds. Vapor percolates or filters through the atmosphere, and travels against the wind. On a point of the western coast of South America in the rainy season it rains just five hours each day, and then clears off, and it takes the sun just about the same time to cross the Atlantic, and it seems to bring its daily supply of rain with it.

Miscellaneous.

THE MORALS OF FRUIT STEALING.

Under this heading the *Rural New York* publishes the following sensible and seasonable article. It is in the right vein to correct the lax puplic sentiment so prevalent in most sections of the country. The remedy suggested in the closing paragraph is the great desideratum, and its adoption would promote a healthy morality, and protect the suffering portion of community.

Judging from the universal laxity of morals on the subject of fruit stealing, prevalent in almost all parts of the country, it would almost seem that the injunction, "thou shall not steal," was generally understood as not intended to have any application to the various articles of property included under the general name of fruit. Parents who would shrink from the thought that a son had been guilty of stealing a shilling's worth of goods from a neighboring store, as from the icy coils of a deadly surpent, too often look with stolid indifference on the prepetration of a robbery of a fruit orchard to the amount of five or ten dollars.

In the one case the idea of disgrace is always attached to the act, as it should be: while in the other, it is not so, but only looked upon as a piece of innocent if not praiseworthy amusement. But let us give the subject a little examination, and see if we should not give the fruit thief quite as indellible a stamp of infamy as we do the person who is guilty of stealing any other sort of property. A plants a half dozen choice pear trees, and stakes them, and prunes and nurses them for eight or ten years, all on the strength of the hope of enjoying their delicious fruit when they come into bearing. And at last he has the satisfaction of seeing a few fine specimens of fruit growing, and many ripening on each of them—he goes out one morning to see if some of them may not be ripe enough to gather, and judge of his disappointment, you who wink at fruit stealing, when he discovers that a thief has got the start of him—that they have all been stolen the previous night. Now, supposing the intrinsic value of the fruit thus stolen does not exceed one dollar, does the reader think for a moment that that is the extent of the injury to the person losing them? By no means, for A. would have preferred that five dollars worth of grain, had been stolen from his granary—and why? simply because he had waited so long for them to grow—had watched their growth with so much interest, and had confidently expected [as he had a right to expect] to gather them for his own use. Indeed the mere money value of the fruit in the market is not the full extent of the loss he has sustained. His disappointment and vexation are not included in this, nor the thought that in spite of his utmost vigilance in future, he has no reliable guaranty against a like misfortune the next season. For growing-fruit cannot be locked up and protected with the ease that most kinds of property can.

So utterly at fault is public sentiment on this subject, that many who have depredations committed upon their fruit, hesitate to prosecute the offenders, when discovered, fearing that such a proceeding will hardly be sanctioned by the community. Now, we submit that this is all wrong—that there is no good reason why the fruit thief who prowls about in the night, when honest people are asleep, for the purpose of plundering fruit orchards should not be held up to the scorn and contemp of the community, and placed in the same category as the sheep-thief, the robber of hen-roosts and the burglar.

There is great need of a change in public sentiment, in respect to this matter. The evil is so prevalent in many sections of the country as to deter many from attempting to cultivate fruit to any thing like the extent they otherwise would. Let the press especially the Agricultural Press, speak out fearlessly on this subject and let all good citizens frown down the idea altogether too prevalent in community, that "it is not larceny to steal fruit." In our opinion the remedy for this evil is in the keeping of the respectable portion of community, to a very great extent; for just so soon as the robber of orchards comes to be looked upon by all respectable people in the same light that the robber of henr-oosts is, the fruit on the trees will become as secure as are the pullets on the roosts—and not before.

CHANGES IN ORTHOGRAPHY.

The following specimens of the Lord's Prayer, in the style in use at various periods, will exhibit the changes which our vernaculor has undergone since its formation, six centuries ago:

A. D. 1300—Fadir our in hevene, Halewyd by thi name, thi Kingdom come, Thi wille be done as in hevene and in erthe, Oure urche dayes bred gives us to day. And forgive us oure dettes, as we forgive our dettoures. And lede us not into tempation, Bote delyvere us of yvel. Amen.

A. D. 1380.—Oure fadir that art in heunes hallowed be thi name, thi kingdom come to, be thi wille be don in erthe as in heune, geve to us this day our breed oure other substaunce, forgeue to us our dettis as we forgouen to oure dettouris, lede us not into temptation; but delyuer us from yeul. Amen.

A. D. 1534.—Oure father which arte in heven hallowed be thy name. Let thy kingdom come. Thy wyall be fulfilled as well in earth as it ys in heven. Geve vs this daye our dayly breede. And forgeve vs oure trespases, even as we forgeve our trespasers. And leade vs not into temptacioun; but delyver vs from evell. For thyne is the kingdome and the power and the glorye for ever. Amen.

A. D. 1582.—Ovr father which art in heauen, sanctified be thy name. Let thy kingdom come. Thy will be done, as in heaven, in earth also. Giue vs to day our super-substantial bread. And forgiue vs our detters, as we also forgiue our detters. And lead vs not into tempation. But delieur us from evil. Amen.

A. D. 1611.—Onr father which art in heauen, hallowed be tha Name. Thy kingdom come. Thy will be done, as in heauen. Giue vs this day our dayly bread. And forgiue us our debts as we forgiue our debtors. And lede vs not into temptation, but delieuer vs from euil. For thine is the kingdome, and the power, and the glory for euer. Amen.

MONSTER GUNS.—Wrought iron guns of monster size and calibre are in course of manufacture at the iron works of Messrs. Nasmyth, near Manchester They will be upwards of three feet in diameter, and about twelve feet long, weighing upwards of twenty tons each, and will discharge a shell of 1,000 lbs. weight a distance of five miles. The Artizan states that it does not expect very brilliant results from these guns, on account of a defective mode of mounting them, no allowance being made for horizontal recoil in the manner they are slung.

EXPLANATION OF MILITARY PHRASES.

A "Division" consists of a force amounting to several thousand men, and is composed of two or more brigades, as a "brigade" is formed by several regiments which "regiments" consists of a certain number of companies A proportion of artillery is usually attached to each division, with one or more batteries so that a division can act as a small army, complete in itself. It is a Lieutenant General's command, and each brigade is under a Major General.

The "Staff" consists of the Generals and their aides-de camp, Brigade Majors, Assistant Adjutant and Quartermaster Generals.

When civilians read that a division, brigade, or regiment moved in, "close column," "open column" or "column," at quarter distance," the term perhaps conveys no definite idea to the uninitiated. But if they understand that a "close column" of a regiment is formed by the companies of which it is composed being drawn up in rear or close behind each other, so that a solid square can be formed in a few seconds, or a line formed on any named company by the remaining companies deploying on the company indicated, which company stands fast during the movement of the others, the meaning is at once obvious.

A 'Column at Quarter Distance" has an open space between the divisions and companies of which it is composed of one fourth of the ground occupied by each, so that by closing the first and second to the front and moving up the two rear companies, while the remainder wheel outward by sections, a square four deep, is formed.

An "Open Column" is when the companies of a regiment are placed behind each other with intervening spaces, sufficient to allow each company to wheel on its flank or pivot, and thus form into a line, &c.

An "Echelon Movement" is a term applied to an oblique line of march, which movement is accomplished by wheeling the companies a given number of paces before marching, according to the degree of obliquity required.

A "Wing" of a regiment implies one-half; thus every regiment has right and left wing. The same term may be applied also to any army.s

"Outlying Picquet" or Picket, is a small body of men, commanded by an officer Its place is in front of an army, to prevents surprise. Picquets are constantly on the alert, and sleep not. This duty generally commences at sunset and terminates after full daylight.

"Inlying Picquet is a similar force which remains in the camp, ready accoutered to turn out on the slighest alarm.

"A Covering Party" generally consists of an officer and forty or fifty men, who take up a position in front of the principal trenches and protect the workmen employed therein from molestation.

"Trenches" are long narrow excavations, some feet in depth, the earth from which is thrown up towards the enemy, so as to afford shelter to the troops who guard them during the night against surprise, &c.

"Gabions" are baskets of a cylindrical form filled with earth, and which are placed opposite the enemy's batteries as a protection to the men when they first break ground and commence to entrench themselves.

The term "Fortress" is applied to a fortified place on an extensive scale; that of "Fort" to a smaller fortification.

A "Bastion" has two or more faces of such a form that, when several of them are joined together a pentagon is the result. It is called the system of "reciprocal defence," as one projecting bastion in the pentagon defends another. A ditch, either wet or dry, adds to the difficulty of approach.

"Lunettes" are small works usually raised in front of sally ports, &c, and when filled with men, are capable of offering considerable resistance.

A "Redan" is a triangular work, generally constructed in front of a more extensive fortification, which it partially protects, and renders an attack on it more difficult.

"Embrasures" are openings in a work through which the guns are pointed.

"Loopholes" are small apertures in a work through which muskets may be fired.

"Redoubt" is a general name for nearly every kind of work in field fortification. Redoubts are sometimes triangular, with flanks; sometimes in the form of a star, called a Star Fort. Redoubts for the defence of positions are in general intended to contain only about fifty men with three guns; but work in form of irregular polygon are sometimes constructed to contain from one thousand to fifteen hundred men, and from twenty to twenty five pieces of artillery, if intended for the protection of any place.

THE WAY THE RUSSIANS TREAT THEIR HORSES.

The Russian coachmen seldom uses his whip, and generally only knocks with it upon the foot-board of the sledge, by way of a gentle admonition to his steed, with whom, meanwhile, he keeps up a running colloquy, seldom giving him harder words than "My brother—my friend—my little white pigeon—my sweetheart" "Come my pretty pigeon, make use of your legs," he will say "What now! art blind? Come, be brisk! Take care of that stone there Dost see it? There, that's right! Bravo! hop, hop, hop! Steady boy, steady! What art turning thy head for? Look out boldly before thee! Hurra! Yukh! Yukh!

I could not help contrasting this with the offensive language we constantly hear in England from carters and boys employed in driving horses. You are continually shocked by the oaths used They seem to think the horses will not go unless they swear at them, and boys consider it manly to imitate this example, and learn to swear too, and break God's commandments, by taking his holy name in vain. And this while making use of a fine, noble animal he has given for our service and not for abuse. There is much unnecessary cruelty in the treatment of these dumb creatures, for they are often beaten when doing their best, or from not understanding what their masters want them to do.

The man who is driving a cart will often stop on a cold winter's morning, and fancying a glass of ale will warm his inside, leave his horses standing in the cold till their legs are stiff; then he comes out half intoxicated, feeling he has lost time, and that his horses must make up for it. So before they perceive him, for he has covered their eyes with blinders, he gives them a great lash, and the poor beasts start, and finding their legs stiff with cold, do not at first go as quick as he wishes. And then he gets angry and curses the poor beasts, and lashes them about the head and on the most tender parts, endangering their

eyes—which are very prominent—with the end of the lash. The drink and the using this bad language, make him get in a passion—for making use of angry words gives rise to bad feelings—and all have an uncomfortable journey. His horses, whether his own property, or entrusted to him by his master, are the worse for the treatment, and the man becomes brutal and hardened.

Now a merciful man is kind to his beast, and a really good driver knows that creatures that are kindly and steadily treated do better and go more willingly. I rode outside the *Free Trader* one morning. It had three fine horses harnessed to it. The driver mounted his box, and put his long whip into a hole in the box, buttoned his coat, and called *tchick, tchick*. Away the horses set off and went willingly and briskly, till he saw a passenger waiting to get into the coach. "Wo—wo!" he cried out. Immediately they stopped and the man got in. "Right!" The docile creatures pricked up their ears and off they set again. The same thing was repeated many times, and the horses always obeyed directly. The man looked proud of the fine obedient creatures in such good training, and the whip had an idle life of it, for they went far more willingly without it.

ANTIPATHY TO SPIDERS.

Few people like spiders. No doubt these insects must have their merits and their uses, since none of God's creatures are made in vain; all living things are endowed with instinct more or less admirable; but the spider's plotting, creeping ways, and a sort of wicked expression about him, leads one to dislike him as a near neighbor. In a battle between a spider and a fly; one always sides with the fly; and yet of the two the last is the most troublesome to man. But the fly is frank and free in all his doings; he seeks his food openly; suspicions of others, or covert designs against them, are quite unknown to him, and there is something almost confiding in the way he sails around you, when a single stroke of your hand might destroy him. The spider, on the contrary, lives by snares and plots; he is at the same time very designing and very suspicious, both cowardly and fierce; he always moves stealthily, and if among enemies, retreating before the least appearance of danger, solitary and morose, howling, no communion with his fellows. His whole appearance corresponds with his character, and it is not surprising, therefore that while the fly is more mischevious to us than the spider, we yet look upon the first with more favor than the last; for it is a natural impulse of the human heart to prefer that which is witty and unsuspicious, even in the brute creation. The cunning and undesigning man himself will, at times, find a feeling of respect and regard for the guileless and generous stealing over him; his heart, as it were, giving the lie to his life.—*Miss Cooper's Rural Hours.*

EVERYTHING LENT.—An old quaint writer once said that children, relatives, friends, honors, houses, land, and endowments, the goods of nature and fortune, nay, even of grace itself, are only lent. It is our misfortune to fancy they are given. We start, therefore, and are angry when the loan is called in.—think ourselves masters, when we are only stewards; and forget that to each of us it will be said, "Give an account of thy stewardship, for thou must be no longer steward."

The Sulky Boy.

This is a species of ill-temper with which you are all familiar. We see persons afflicted with it, almost every day—and a sad affliction it is, too, both to themselves and to their neighbors. There is Robert—for instance—a good boy, in many respects, but once in a while he has a desperate fit of the sulks, which nearly if not quite balances the credit side of his character, and leaves him with more demerits than merits. So long as he can have his own way, every thing goes on pleasantly, but let his father interfere with some plan he has formed, or set him about some job he does not like, and you will soon find out what his temper is. For hours after, perhaps for a day or two, he is surly, morose and gloomy. He says but little, but when he speaks, he snaps and growls like an angry wolf. He pouts, scowls and looks sour at everybody, friends as well as foes; and should you attempt to reason kindly with him on his folly he grows more obstinately sullen than ever. Do you ask what good all this does? I do not know. There certainly can be no pleasure in this punishing one's self; on the contrary, he greatly aggravates his disappointment. A cheerful, sprightly temper makes its possessor happy; but a sulky one can only render its owner wretched. The lad I have described indulges only occasionally in these fits; but there is danger that this sullen state of mind will after a while become permanent with him, if he does not soon break himself of the habit. He is gradually souring his disposition, and the habit is growing upon him. It will be well if he does not turn out in the end a mere Nabal—the churl whose character is described in 1 Sam. 25.—*Boy's Own Guide.*

ANIMAL SAGACITY.

In the immense forests of North America the moose-deer is hunted by the Indians with such relentless perseverance, that all the instincts of the quadruped are called forth for the preservation of its existence. Tanner, a white man who lived thirty years in the woods, thus describes the extraordinary extent of the moose's vigilance:—"In the most violent storm, when the wind and thunder and the falling timber are making the loudest and most incessant roar, if a man, either with his foot or his hand, breaks the smallest dry limb in the forest, the moose will hear it; and though he does not always run, he ceases eating, and arouses his attention to all sounds. If, in the course of an hour, or thereabouts the man neither moves nor makes the least noise, the animal may begin to feed again, but does not forget what he has heard, and is for many hours more vigilant than before."

CLOUDS.—There is certainly something mysterious in the clouds, and certain kinds have often a wonderful influence over us.—They march, and would take us up with their shadows and bear us away; and while their forms are lovely and variegated their brightness and the splendid light that then reigns on the earth, are like a prophecy of an unknown, ineffable glory. But there are also dim, and grave, and terrible forms of clouds, in which all the terrors of the ancient night appear to assail us. The heaven appears as it would never become clear again, the cheerful blue is expunged, and a lurid copper red, on a black grey ground, awakes terror and awe in every breast.

CHINESE AND ENGLISH FASHIONS.

Europeans who go to China are apt to consider the inhabitants of the Celestial Empire very ridiculous and the provincial Chinese at Canton and Macao pay back this sentiment with interest. It is very amusing to hear their sarcastic remarks on the appearence of the devils of the West, their utter astonishment at the sight of their tight-fitting garments, their wonderful trowsers and prodigious round hats like chimney pots, the shirt collar adapted to cut off the ears, and making a frame around such grotesque faces with long noses and blue eyes, no beard or moustache, but a handful or curly hair on each cheek. The shape of the dress coat puzzles them above everything. They try in vain to account for it, calling it a half garment because it is impossible to make it meet over the breast, and because there is nothing in front to correspond with the tail behind. They admire the judgement and exquisite taste of putting buttons behind the back were they never have anything to button. How much handsomer they think themselves, with their narrow, oblique, black eyes, high cheek bones and little round noses, their shaven crowns and magnificent pig-tails hanging almost to their heels. Add to all these natural graces a conical hat covered with red fringe, and ample tunic, with large sleeves and black satin boots, and a white sole of immense thickness, and it must be evident to all that a European cannot compare in personal appearance with a Chinese.

STICK TO IT, YOUNG MEN.

The very doctrine of all others, "Stick to it." Who ever knew a mortal to enrol himself under this banner, and come out the little end of the horn? Nobody we'll be bound. Its principle, acted up to with rectitude, purpose, heart and soul, would keep any man above water and in blue sky,

"Stick to it. It's the very history, all experience, the triumph of mind, art, literature, every great and noble work in its direct and appropriate illustration He would be, do, gain, make save, achieve anything, in whatever department of life, trade, politics, religion, philantrophy, or love, must make it his first and last object of solicitude—the Alpha and Omega of aspiration and action.

Tell us, young man, who never did a thing worth a note, that did not "stick to it."—Look around your acquaintances, and see who is, and who is not "something." In him who is deservedly famous and honored, you will find the man who, years ago, in the strength, determination, energy, and light of an all-conquering resolution, said, "I'll stick to it," and who did and has stuck to it ever since.

What has made great lawyers, statemen, divines, artists? What has made a Webster, a Choate, a Brougham, a Kossuth? Simply and solely, and truly, by choosing something real and vital, and "sticking to it." Armed with its principles and inspirations, you may rise to undreamed of heights—wanting it, you may sink to unthought of depths.

Farm Machinery.—Among the most useful of machines of the farm, beyond the simple implements of husbandry, may be reckoned the threshing machine, the corn-sheller, the root and straw-cutter, the horse power, and the portable steam engine. The smaller farms will not warrant the outlay necessary for the purchase of all these, but the larger farms, which are frequently destitute of nearly every one of them, ought as a matter of economy to possess the whole.

Notions of Beauty.—The Japanese women gild their teeth, the Indians paint them red, whilst in Guzurat the pearl of the teeth to be beautiful must be dyed black. The ladies of Arabia stain their fingers and toes red, their eyebrows black, and their lips blue. In Persia they paint a black streak round the eyes, and ornament their faces with various figures In Greenland the women color their faces with blue and yellow, whilst the Hottentot women paint in compartments of red and black. Hindoo females, when desirous of appearing particularly lovely, smear themselves with a mixture of saffron, tumeric and grease. In ancient Persia an aquiline nose was often thought worthy of the crown; but the Sumatran mother carefully flattens the nose of her daughter. An African beauty must have small eyes, thick lips and a large flat nose.

Happiness not in station alone.—There is one experience, gentlemen, to which the history of my various changes in life has peculiarly, and I will even say, has painfully exposed me—how little a man gains or rather, indeed, how much he loses in the happiness of natural and healthful enjoyment, in passing from a narrower to a wider, and what some may call a more elevated sphere. There is not room in the heart of man for more than a certain number of objects; and he is therefore placed far more favourably for the development of all that pleasure which lies in the kind and friendly affections of our nature, when the intimacy of his regards is permitted to rest on a few, than when bustled through an interminable variety of persons and things, each individual can have but a slender hold upon the memory, and a hold as slender upon the emotions.—*Dr. Chalmers.*

The Effect of Temperance.—At a late anniversary of one of the literary societies of Yale College, Professor Silliman was called out by a complimentary toast. In the course of his remarks, the Professor proceeded, for the benefit of the younger brothers present, to say how it was that at his age (76 years,) he enjoyed such excellent health and spirits. He said that at thirty he was dyspeptic and feeble He cut off determinedly all stimulants, and had used none since. He dieted one year, and then returned to his labor. He ate always plain, nutritious food, and drank nothing but plain ,dilutent drinks. He eschewed tobacco in every form. Every morning he used the sponge and cold water, and felt now no less powers of endurance than when he was a young man, and no abatement of intellectual power.—*Salem Gazette.*

A Monster Railway along the whole course of the Mississippi river from New Orleans to the Falls of St. Anthony, is spoken of by the Dubuque *Tribune* as being in process of construction. From New Orleans to Memphis the road lies east of the river, and the distance is 390 miles. At Memphis it crossed to the Arkansas side of the river, and traverses that State seventy miles. From the Arkansas boundary to the city of St Louis, it is called the St. Louis and Iron Mountain Railroad, and is in charge of a company which is making preparations to run an engine on it this year. From St. Louis to St. Charles, Mo, it is called the North Missouri Railroad. From thence to Keokuk, Iowa, it is called the Mississipi Valley Railroad North, and a company has been organized to build the line one hundred and forty miles.—From thence to St. Anthony, Minnesota, companies are already chartered to build the road. When finished, as all the various divisions will be at no distant day, the road will be the longest in the world.

Steam Carriages for Common Roads.—Mr. J K. Fisher, of New York City, sometime since constructed a steam carriage to be used on common roads, which we understood at the time was considered quite a successful experiment. Latterly he informs us,he has made a decided improvement in the springs thus perfecting what was before considered by many a very creditable contrivance for locomotion. We are not prepared to say that his method of transportation will ever become general yet we do not see why it may not to a certain extent be used on level hard roads. He is sanguine that it will meet with approbation from the public and supersede horse power.—*I ventor.*

Electric Light.—Prof. Callan has recently published an interesting paper, giving the results of a series of experiments made by him on the decomposition of water by the galvanic battery, with a view to obtain a constant and brilliant line light. He states that some of his experiments have led him to believe that, by means of the arrangement of the electrodes for a current of high intensity, the decomposing power of the battery may be considerably increased, but from other experiments he was somewhat disposed to infer that by such arrangement no increase of power can be gained. The Professor promises to relieve his doubts by further investigations.—*N. Y. Eve. Post*

The Steam Whistle.—Many persons who are constantly in the way of listening to the horrid howl of the steam whistle, are unacquainted with the mechanical means by which its effects are produced. The whistle is formed of two cups, placed one above the other, and opening towards one another. The lower cup is nearly filled by a ball or gland, so as to leave a narrow annular opening of 1-32 inch in width around the edge of the cup. The upper cup is hollow, and its lower edge is about one inch, or 1½ inches from the lower cup. By admitting steam through a valve to the lower cup, it escapes through an annular opening and impinges against the edge of the inverted cup. This produces the sound. The heaviest whistles for locomotives are six inches in diameter. The hollow upper cup is made of sheet, brass or copper.

The Patent Office Reports show that 1,554,015 tons of guano have been imported into Great Britain since the commencement of the trade.

Domestic Economy.

PRESERVATION OF FRUIT.

Mr. Greely, in a recent letter to the New York Tribune, on the Paris Exhibition, speaking of an invention by M. Masson, for the preservation of all description of fruit and vegetables says :

The process consists mainly, I am informed, in the slow evaporation of the water contained in the esculents to be preserved, by means of a series of ovens, in which they are subjected first to a very gentle, afterward to a higher, but still moderate warmth, until the last article of moisture has exhaled. The dried residium is now simply packed in papers, (not air tight cans,) where it may remain for weeks under any skies, subjected to any alteration of temperature, and when opened requires only to be soaked in water to restore it to its original state. I see no reason why fruits should not in time be operated on with like success and thus peaches, grapes, strawberries, pine-apples, &c., be enjoyed not merely at all seasons but in all climates, and a whaler frozen up in Lancaster Sound made a Christmas dinner of turtle soup, roast (fresh) beef, green peas, cucumbers, apricots, bananas, muskmelons. and all the delicacies of New York or Paris of every season. This process, I learn, has now been several years in use, until its success on the largest scale is no longer a question. I presume it has ere this been transplanted to the United States ; if not, it speedily should be. It is of far more consequence to mankind than the fate of Sebastopol.

DOMESTIC RECIPES.

SELECTED FROM VARIOUS SOURCES.

To Preserve Plums.—Make a syrup of clean brown sugar ; clarify it : when perfectly clear and boiling hot, pour it over the plums, having picked out all unsound ones and stems ; let them remain in the syrup two days, then drain it off ; make it boiling hot, skim it, and pour it over again ; let them remain another day or two, then put them in a preserving kettle over the fire, and simmer gently until the syrup is reduced, and thick or rich. One pound of sugar for each pound of plums. Small damsons are very fine, preserved as cherries or any other ripe fruit ; clarify the syrup, and when boiling hot put in the plums ; let them boil very gently until they are cooked, and the syrup rich. Put them in pots or jars ; the next day secure as directed.

Dried Peaches.—Peaches, as usuaally dried, are a very good fruit ; but can be made vastly better if treated in the right way. Last season the recipe which had quite a circulation in the papers of drying the fruit by a stove after halving it and sprinkling a little sugar into the cavity left by the extracted pits, was tried in our family. The fruit was found to be most excellent ; better to the taste of nine out of ten persons than any peach preserves, by far. The peaches, however, were good ones before drying ; for it is doubtful whether poor fruit can be made good by that process or any other.—*Prairie Farmer.*

Tomato Sauce.—Gather your tomatoes when fully ripe, and after washing, mash them in some suitable vessel. Then place them in a kettle over a moderate fire and when just warmed through, press a cullender down upon them—then dipping from the cullender all the watery juice possible. After boiling a short time, strain the mass through a wire sieve just fine enough to retain the rinds of the fruit—then return it to the kettle and boil it down to the desired consistency, (some prefer to thin, as it retains more of the flavor,) taking all care that it does not become scorched in the process, Heat the bottles you intend to use, in a steamer, to boiling heat, and while they retain this heat fill them with sauce in a boiling state. Then cork immediately with good corks, and place them where they will cook slowly.

Tomatoes thus prepared will keep good and retain all their original freshness and flavor until their season comes round again.

Cement for Broken China, Glass, &c.—The following recipe, from experience, we know to be a good one, and being nearly colorless, it possesses advantages which liquid glue and other cements do not. Dissolve half an ounce of gum acacia by a wine glass of boiling water ; add plaster of Paris sufficient to form a thick paste, and apply it with a brush to the parts required to be cemented together. Several articles upon our toilet-table have been repaired most effectually by this receipt.—*English Paper.*

To Dry Plums.—Split ripe plums, take the stones from them, and lay them on plates or sieves to dry in a warm oven or hot sun; take them in at sunset, and do not put them out again until the sun will be upon them; turn them that they may be done evenly; when perfectly dry, pack them in jars or boxes lined with paper, or keep them in bags; hang them in an airy place.

To Preserve Plums.—Make a syrup of clean brown sugar, clarify as directed in the recipes; when, perfectly clear and boiling hot, pour it over the plums, having picked out all unsound ones and stems; let them remain in the syrup two days, then drain it off; make it boiling hot, skim it, and pour it over again; let them remain another day or two, then put them in a preserving kettle over the fire, and simmer gently until the syrup is reduced, and thick or rich. One pound of sugar for each pound of plums. Small damsons are very fine preserved as cherries or any other ripe fruit; clarify the syrup, and when boiling hot put in the plums; let them boil very gently until they are cooked, and the syrup rich. Put them in pots or jars; and secure as directed.

Preserving Eggs.—A correspondent of the Southern Cultivator gives the following as a certain recipe:—Grease fresh eggs with lard, and pack them away in a keg with alternate layers of corn or wheat bran, small ends downwards, and so arranged as neither to touch each other or the sides of the keg. In this way they have been kept perfectly sound for twelve months.

To Make Watermelon Butter.—Split the melon open, with a spoon scrape out the pulp into a cullender, and strain the water into vessels; boil it down to a syrup; then put in apples or peaches, like making apple butter or any kind of preserves. Or the syrup may be boiled, without fruit, down to molasses which will be found to be as fine as the sugar house molasses.

Fleas, Bed-Bugs, &c.—A writer in the Gardeners' Chronicle recommends the use of the oil of wormwood to keep off the insects above named. Put a few on a handkerchief or a piece of folded muslin, and put in the bed haunted by the enemy. Neither of these tribes can bear wormwood, and the hint is especially commended to travellers who are liable to fall among the topers of blood.

Receipt for Making Tattlers. Take a handful of the vine called Runabout, the same quantity of root called Nimble-tongue, a sprig of the herb called Backbite, (at either before or after the dog days,) a tablespoonful of Don't you-tell-it, six drachms of Malice, a few drops of Envy—which can be purchased in any quantity at the shops of Miss Nancy Nightwalker. Stir them well together and simmer them for half an hour over the fire of Discontent, kindled with a little Jealousy—then strain it through the rag of Misconstruction, and cork it up in the bottle of Malevolence, hang it upon a skein of Streetyarn, shake it occasionally for a few days, and it will be fit for use. Let a few drops be taken just before walking out and the subject will be enabled to speak all manner of evil, and continually.

Coffee Stains, Mud Splashes &c, will mostly give way to the use of soap and water. Curd soap should be applied for this purpose. Obstinate stains which will not yield to these treatments must be submitted to the bleaching powers of the fumes of sulphur. This is conveniently applied by igniting some brimstone under a cone or funnel made of card board. The stains must be wetted, and then held over the top of the chimney until they disappear.

Cheap and Excellent Candles.—The following receipt I have tried twice, and find it all that it is cracked up to be. I have no doubt that it would have been worth more than $20 to me if I had known it twenty years ago. Most farmers have a surplus of stale fat and dirty grease, which can be made into good candles at a trifling expense.

I kept both tallow and lard candles through the last summer, the lard candles standing the heat best and burning quite as well, and giving as good a light as the tallow ones. Directions for making good candles from lard: For 12 lbs. of lard, take 1 lb. of saltpetre, and 1 lb. of alum; mix them and pulverize them; dissolve the saltpetre and alum in a gill of boiling water; pour the compound into the lard before it is quite all melted, stir the whole until it boils, skim of what rises; let it simmer until the water is all boiled out, or till it ceases to throw off steam; pour off the lard as soon as it is done, and clean the boiler while it is hot. If the candles are to run, you may commence immediately; if to be dipped, let the lard cool first to a cake, and then treat it as you would tallow.—*Cor. N. Y. Farmer.*

Wheat Meal Pudding.—*Fine Flavored.*—Beat five eggs, add to them four cups sweet milk, one of sweet cream, with salt. Into this stir a cup full of flour and wheat meal, sufficient to make a batter a little thicker than for griddle cakes. Boil one and a half hours. Serve in the same manner. The water should be boiling when the puddings are put in, and kept so till they are done. It is necessary to turn them occasionally, as they will rise to the top.

Setting Tea Things.—Instead of the ever recurring clatter and the loss of time incidental to putting all that is wanted twice a day in most families entirely away, and getting it out again for breakfast and tea, I have learned to get the necessary articles ready for the next meal immediately after washing them up from the former. Of course, this necessitates the consecration of one tray to cups and saucers, &c., and will make it advisable to find or provide a shelf wide enough to hold it. But, as materially hastening to the operation of "bringing tea" fourteen times in every week, it would be worth some contrivance, for its comfortable accomplishment in all houses. It might be a curious test of the comparative prevelence of what is by courtesy termed "common sense," to ascertain how many individuals in the different classes of mistresses and servants, in their endeavors to carry out the above method, would naturally wash the tray first, and how many would begin with the cups and saucers.—*Godey's Ladies' Book.*

One Way to Cock Chickens.—The following is highly recommended:—"Cut the chicken up, put it in a pan and cover it over with water; let it stew as usual, and when done make a thickening of cream and flour, adding a piece of butter and pepper and salt; have made and baked a pair of short cakes, made as for pie-crust, but rolled thin and cut in small squares. This is much better than chicken pie and more simple to make. The crusts should be laid on a dish, and the chicken gravy put over it while both are hot."

Cheap Carpeting.—Sew together strips of the cheapest cotton cloth, of the size of the room, and tack the edges to the floor. Then paper the cloth with any sort of room paper. After being well dried give it two coats of varnish, and your carpet is complete. It can be washed like carpets without injury, retains its gloss, and on chambers or sleeping rooms, where it will not meet with rough usage, it will last two years as good as new.

To Make Good Apple Jelly.—Take apples of the best quality and good flavor (not too sweet,) cut them in quarters or slices and stew them till soft; then strain out the juice being careful not to let any of the pulp go through the strainer. Boil it to the consistency of molasses, then weigh it and add as many pounds of crushed sugar, stirring it constantly till the sugar is dissolved. Add one ounce of extract of lemon to every twenty pounds of jelly, and when cold set it away in close jars It will keep for years. Those who have not made in this way will do well to try it; they will find it superior to currant jelly.

Furniture.—As in dress, so in furniture—a little taste is better than much money without it. There are certain articles which, if good, cost much, such as carpets and mirrors. But couches, lounges, ottomans, and chairs may be had quite cheap, and also very tasteful, by the exercise of a little art and industry. A common chair which costs a dollar, stuffed and covered at the cost of another dollar, may be a better and more beautiful article than one you buy for ten; and five dollars and a few hours' labor will give you a couch really more elegant, as well as more comfortable, than a sofa that costs fifty. But a good pianoforte, like a good mirror, has the element of cost, and to save a hundred dollars in one, or twenty in the other, is poor economy. Plate glass keeps its value; and a good tone is worth more than all outside finish.

Don't make your rooms gloomy. Furnish them for light, and let them have it. Daylight is very cheap, and candle or gas light you need not use often. If your rooms are dark, all the effect of furniture, pictures, walls and carpet are lost.

Finally if you have beautiful things, make them useful. The fashion of having a nice parlor, and then shutting it up all but three or four days in a year, when you have company—spending your own life in a mean room, shabbily furnished, on an unhealthy basement, to save your things, is the meanest possible economy. Go a little further—shut up your house and live in a pig-pen. The use of nice and beautiful things is to act upon your spirit—to educate you and make you beautiful.—*Manners Book.*

Editorial Notices.

THE PROVINCIAL SHOW OF UPPER CANADA.

This great annual gathering of the people and productions of this Province, will, as all our readers are doubtless aware, come off at Cobourg, on the 9th, 10th, 11th, and 12th instant. All articles, except animals, intended for exibition, should be on the ground *at the latest on Tuesday morning*, the 9th instant. Live Stock should not be later than *Wednesday Morning, eight o'clock.* There is every prospect of a large Exhibition.

We have been requested to correct a typographicall error in the Prize List. The end of Chap 30. on page 15, the column of Shillings is made to answer for pounds. This error is so obvious one would think it would hardly lead to any practical mistake: but we notice it as a correspondent has drawn our attention to the subject.—*B.*

DEATH OF PHILIP PUSEY, ESQ.

This celebrated agriculturist has recently been removed from an extensive field of useful and honorable labor by the hand of death. For several years Mr. Pusey occupied a foremost rank among British land owners and farmers; and his loss will be felt by those interested in the progress of agriculture in different parts of the world. He was, among the proprietors of the Royal English Agricultural Society, elected, we believe, twice to the high office of its Presidency: and enjoyed the universal respect and confidence of its numerous members. He represented in Parliament the County of Berkshire in which his estate was situated, for several years; and his efforts, as a legislator, particularly on behalf of tenant right, as a powerful means of improvement, were warmly and extensively appreciated "His reports of Agriculture generally, (remarks the *Agricultural Gazette,*) and of local Agriculture in particular,—his own contributions to the improvement of its practice and to the discussion of its theory; and above all, the sober-minded judgment under which all the contributions to the *Journal* have been passed, so that under his editorship, it has become the most useful and most instructive periodical that agriculturists have ever read:—these are what most justly bind the gratitude of British agriculturists to the memory of their friend and benefactor—Philip Pusey."—*B.*

TESTIMONIAL TO MR. J. B. LAWES.

We learn from the English papers that a very appropriate and costly testimonial was recently presented to Mr. Lawes, of Rothhamsted Park, by the Agriculturists of England. Our readers are doubtless aware of the important services Mr. Lawes has rendered scientific and practical Agriculture by his numerous, extensive, and costly experiments. To him the farmer is indebted for much of his knowledge of the action and application of new substances as fertilizers, as well as for clearer and more enlarged views of the principles of vegetable and animal nutrition. The testimonial consists of a new Chemical Laboratory, constructed on the most approved modern principles, on Mr. Lawes's estate in Hertfordshire, at a cost of one thousand pounds. Also, an "heirloom," consisting of a handsome and massive silver Candelabrum, of characteristic design, bearing the following inscription:—"Presented to John Bennet Lawes, Esq., as an heirloom;—at the same time with a Laboratory at Rothhamsted, Herts, in acknowledgment of the eminent services he has rendered to the science and practice of Agriculture, July 19th, 1855."—*B.*

☞ Through some unaccountable mistake a contribution to the Horticultural Department, from Geo. Leslie, Esq, of this city, got mislaid, and was not discovered until two late for this number.

TORONTO MARKETS.

Wheat has been coming in rapidly during the month, and the receipts foot up to 101,648 bushels since August 1st, of this 81,995 bushels have been shipped to the States. Prices for the last week of the month ruled between 9s to 9s 5d; and on Thursday, 27th, 9s 6d per bushel was paid for a good sample. Farmers Flour sells at $8½ @ $9 at retail; Oats 2s 6d @ 2s 9d; Potatoes 2s 3d. @ 3s.; Apples 7s 6d @ 8s 9d per brl.

SEED POTATOES.

FOR SALE—A quantity of potatoes grown on the Experimental Farm, the seed imported from England two years ago, of the following sorts:—"Goldfinders;" "Early Shaws;" "Kentish Kidneys;" and "York Regents."

The Potatoes will be put up in new two bushel bags; price, including bag, five shillings.—Applicants should be particular in naming the sorts, and the mode of transmission, enclosing the amount to Professor Buckland. As the potatoes are being taken up, immediate orders are requested.

Board of Agriculture.
Toronto Sept. 28th. 1855.

UNIVERSITY COLLEGE, TORONTO.

THE Lectures on the History, Science, and Practice of Agriculture will commence early in November. Young men from the country, can attend during Winter, other classes, such as Chemistry Geology, Natural History, &c, for a very small outlay. Particulars may be obtained of Professor Buckland, Board of Agriculture.

Toronto, Sept. 25th, 1855.

TORONTO NURSERIES.

THE Subscriber respectfully invites Gent'emen and Farmers about to plant trees this Fall to visit the Nurseries and examine for themselves. The stock of Fruit and Ornamental Trees' &c., &c., offered this Fall and next Spring is the largest and finest ever offered by one establishment in this country. The trees are large, healthy, and well rooted. Farmers would do well to order their trees DIRECT FROM THIS NURSERY, instead of buying from pedlars, or bring their teams to the Nursery, and choose their own trees. In this way they need not loose a tree in a hundred. Printed directions for planting will be given to purchasers along with their trees. Parties commencing the Nursery business, supplied with specimen Trees and Fruit-tree-Stocks of all kinds and parties wishing to sell again supplied at wholesale prices. Wholesale and Retail Catalogues will be sent on application.

The Subscriber would like to appoint a respectable man as Local Agent in every Township in the Province, one who would be responsible to the people in getting a good article. Assessors and Collectors of Townships would be proper parties to undertake this business. Commission to them for their trouble will be very liberal. Packing done in the best manner, so as to ensure the safety of the Trees and Plants to the most distant parts of the Province.

All letters and business communications will be promptly attended to, address POST PAID to

GEO. LESLIE.
Toronto Nurseries.

Toronto, August, 1855. 9-2t

IMPORTANT SALE OF HORSES, CATTLE, SHEEP, PIGS, FARMING IMPLEMENTS, &c.,

WIll be Sold on THURSDAY, the 18th October next, on the Property of WM MILLER, Lot 24, 7th concession of Pickering, the following Stock:

HORSES.

1 span of Clyde Mares, 1 ditto of Geldings,
1 two year old Filly by George Buchanan,
1 two year old imported entire Colt—This fine animal has already taken Three First Prizes,
1 one year old Colt by Farmer's Glory.

SHORT HORNED CATTLE.

1 three year old Bull, from the stock of L. F. Allen, New York.
1 two year old Heifer, which gained the First Prize at the Provincial Exhibition of 1854, besides other three prizes. 4 one year old Heifers—Imported from the stock of Mr. Robert Syme, Redkirk, Dumfrishire, Scotland.
1 two year old Galloway Heifer—Imported.

GRADE CATTLE

6 good Milch Cows, well crossed with imported Bulls.
3 three year old Heifers, do.
4 two year old Heifers, do.
2 one year old Heifers, do.
5 Heifer Calves.
5 fat Steers.
1 yoke of Working Oxen.
4 two year old Steers.
4 one year old do.

LEICESTER SHEEP.

7 two shear Rams, imported.
15 one do do.
25 Ram Lambs from imported stock.
20 aged Ewes, imported.
6 one shear do. from imported stock.
20 Ewe Lambs, do.

The most of these Sheep are from the Stocks of Messrs Wilkin, Beattie, Burton and Carter, noted beeeders in England and Scotland.

COTSWOLD SHEEP.

2 aged Rams—2 shearling Rams.
2 Ram Lambs—2 aged Ewes.
2 Ewe Lambs.

SWINE.

1 Boar improved imported breed.
1 Sow and Pigs.
7 Store Pigs—7 small Pigs.
A lot of Poultry, Dorking and Shanghai Breeds.

FARMING IMPLEMENTS.

1 Thrashing Machine, near y new,
2 Lumber Waggons.
A one horse Buggy with silver-mounted Harness.
2 sets of Team Harness.
2 Iron Ploughs, imported.
1 Turnip-cutter, do

And a variety of other articles, all of which will be sold without reserve.

Terms of Sale—All sums under £2 10s, cash; over that sum 12 months credit on approved notes.

Sale to commence at 10 o'clock precisely.

The above Property containing 200 Acres, of which 160 is cleared, To be Let—Terms made known at time of Sale.

NOTE—THE PEDIGREES OF THE IMPORTED HEIFERS ARE IN THE HANDS OF THE OWNER.

Toronto, Sept 13, 1855.

DURHAM BULL FOR SALE.

THE Subscriber will offer for Sale, at the Provincial Exhibition at Cobourg, the four-year-old Durham Bull, "ADAM," got by "Halton;" dam, "Lady Elgin." He took the first prize as a three-year-old Bull at the Provincial Show, London, C.W., in 1854.

WM. H. BERESFORD.

Newmarket, September 27, 1855.

TO BE SOLD,

The Property of the East Zorra Ag. Society,

A Fine Agricultural Stallion

16 hands high, dark dappled bay with black mane, tail, and legs, by Old Clyde, out of a Cleveland mare He is five years old this month, and has taken 6 first and 1 second prizes at different Shows For particulars apply to the Secretary of the East Zorra Agricultural Society, Woodstock.

Woodstock, July 18th, 1855. 8-3

SUFFOLK PIGS,

(Directly from Imported Stock.)

THE Subscriber offers for sale, a few of these incomparable Pigs, singly, or in properly selected pairs.

PATRICK R. WRIGHT.

CASTLETON FARM,
Cobourg, C.W., July, 1855. 8—tf.

ENGLISH CATTLE,

IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,

Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs. BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattte an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs. Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commi sion Charged.

Horse,	each,	$80
Bulls or Cows,	"	60
Ram or Ewe,	"	30
Three Sheep from the same owner,	each,	2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner,	each,	22
Ten " "	" " "	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses, &c., as follows:

Horse,	each,	$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer provision for 30 days.

Horse,	each,	$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels, provision for 60 days

Horse,	each,	$70
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and Col. Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

Breed.	Horse.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel.	If insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prev ent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

		$.	$.	$.
Thorough Bred Horses, from	-	1000 to	2000	1200
Short Horn or Durham Bull	-	400 "	1500	700
Do Cows	-	200 "	800	400
Do yearling Bull	-	200 "	1000	500
Do do Heifer	-	175 "	400	250
Herefords Bull	-	300 "	830	500
Do Cows	-	200 "	600	250
Devons Bull	-	300 "	800	400
Do Cows	-	200 "	500	250
Ayrshire Bull	-	150 "	300	300
Do Cows	-	150 "	250	200
Alderney Bull	-	150 "	225	175
Do Cows	-	100 "	150	125
			Will weigh when killed and dressed	Will shear of washed wool
Cotswold Sheep Ram	-	100 to	300	13 lbs 12 5 to 15 lbs
Do Ewe	-	25 "	100	30
Leicester Sheep Ram	-	100 "	200	120 lbs 100
Do Ewe	-	20 "	80	25
South Down Sheep Ram	-	160 "	300	112 lbs 12 5 6 to 9 lbs
Do Ewe	-	25 "	100	30
Hampshire do Ram	-	75 "	125	120 lbs 100 6 to 10 lbs
Do Ewe	-	15 "	25	23
Swine Boars	-	25 "	50	40
Do Sows	-	15 "	40	25
Merino Sheep from Spain				
Mules from Spain.				5

GALLOWAY BULLS FOR SALE.

THE Subscriber will offer for sale at the Provincial Exhibition, to be held at Cobourg, 2 PURE BRED BULL CALVES, from imported Cows; also, 4 IMPORTED CHEVIOT RAMS, to be seen at the premises of the subscriber, near Cobourg.

WILLIAM RODDICK.

Cobourg, June, 1855. 7.

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture of Upper-Canada, No. 2, Vol. 1st, pp 160 Toronto: printed and published by Thompson & Co, for the Board of Agriculture.

This work is issued in quarterly parts, four of which will form a volume. The first part embodies the transactions of this Provincial Association from its institution in 1846, down to the commencement of the year 1851 The next number contains an account of the further proceedings of the Association and the Board of Agriculture, Prize Essays, Abstract of County Reports, &c., down to 1843.

The work will be sent free by post for 5s per annum. All communications and remittances to be addressed to the Secretary of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855. 5.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at Cobourg in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND, *Secretary.*

Office of the Board of Agriculture
Toronto, March, 1855.

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision.

A man and three boys can turn out from 5, 00 to 10, 00 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - - - - - - - - - - - - - - - - - - - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - - - - - - - - - - - - - - - - - - - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,

Drainage Engineer, Hamilton, . W., the Patentee.

Hamilton, March, 1855.

SPRING STOCK OF IMPLEMENTS.

THE Subscribe s beg to info m Agriculturists and Horticulturists, that they have received a large and varied assortment of

FARM AND GARDEN IMPLEMENTS

And would solicit a call f om pa ties about to pu chase, at No. 77, co ne of Yonge and Adelaide streets, Toronto They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand Reaping and Mowing Machines on the most improved p inciples, will be for sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second, Bred by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds ; if grade, 50s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (1621 English Herd Book), was sold in 18.3 for $4,000.

FREDERICK WM. STONE.

Guelph, April 24, 185.

COMBINED REAPER AND MOWER.

Manny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught —the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground ; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $13 . We are also manufacturing Burall's Reaper, price $120 ; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, May 6, 1855.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture Horticulture Farm Mechanics*, and to the advancement of the *Farmers' interests* &c eral y It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, beside Editoral and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributors to this journal.

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THE

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Agriculture, &c.

THE COBOURG EXHIBITION.

The Tenth Annual Exhibition of the Agricultural Association was held at Cobourg, on the 9th, 10th, 11th, and 12th of last month, according to announcement. In some respects it was superior to any of the previous exhibitions; while in others it came short. These variations must be looked for, especially under the moveable or itinerant system which the Association has adopted. Severa departments of the Show must always be contri buted from the locality; and these will vary accord ing to the habits, tastes, and pursuits of the people Our country is now so large and so well-developed that the peculiarities of its townships, cities, and neighbourhoods, are sufficiently marked for observation. While the country was new, and the virgin soil yielded abundantly to the most careless cultivation, there was neither occasion, nor room for much diversity of system or practice in Agricul ture But after a few crops had exhausted the richnes, distributed by nature, in its forest leaves, with so even a hand, the peculiarities of the subsoil be came apparent and demanded special treatment.— The crops and mode of culture adapted to the east, will not answer in the west, and thus a diversity has sprung up of which the Provincial Show is at once the record and the result.

In the vicinity of Cobourg for instance, judging from what we saw, the wheat crop produces an inferior sample as compared with some other parts of the province. The Canada company's prize was carried off by F. W. Weese, of the county of Prince Edward whose wheat was by no means extraordinary. We should not wish to see it sent to a world's fair as a sample of the best that Canada can produce The other entries for this prize were quite inferior and would hardly command a medium price in the Toronto Market. The quality of the spring wheat, however, grown in the neighbourhood of Cobourg was very good. On the other hand the display of field-roots, was, considering the season, very superior. The soil of the townships in the rear of Cobourg seems well adapted for turnips and root crops. We had the pleasure of visiting the farm of Jno. Walton Esq., near Peterboro', and on our way was surprised to see fields of 4, 5 and 6 acres well covered with turnips, that had escaped the fly, drought, and all other enemies. Mr. Walton farms admirably. He carried off the first Prize in the class of aged Durham Bulls, and exhibited also a good herd of thorough bred cows. He says that if it were not for his turnip crop he could not raise stock profitably. His summer pasture is poor but he makes up the deficiency during winter. Here then we have a different system of culture indicated a different rotation rendered practicable, from that which prevails on the clay soils of this neighbourhood and further west.

We must refer the reader to the Prize List which is published in full in this number, and as finally corrected by the Secretary, for information as to the persons and localities to whom and to which prizes were awarded. We have room for a few general remarks only. In cattle, horses, and sheep, we think this exhibition was an improvement on its predecessors. We never saw so large a show of Devons at any previous exhibition

The young animals, especially, were very superior. They were chiefly from the Western part of the Province. We believe this breed is better adapted to the poorer soils of the country than the Durhams, and we therefore gladly hail their appearance in such promising numbers at our annual fairs. The show of Durhams was excellent. Several of the bulls had been exhibited at former shows, but most of the cows and the young stock were shown for the first time. It is very apparent that there is no falling off in this splendid breed. They shew no symptoms of deterioration, though in many cases exposed to the same treatment as the common stock of the country. We heard a gentleman, who has been in the habit of attending the agricultural shows of England, declare that the young stock, both Devon and Short horn, was quite equal to what he had seen there. We doubt whether the Durham cattle now in Canada will be much *improved* by the importations likely to be made for some time to come. The very high price which first-rate animals command in England puts them beyond the reach of ordinary means, and compels Canadian importers to select from less noted herds. No better blood can be procured than we already have, and the number is now so great, and embracing, as it does, descendants of all the most celebrated tribes, there is no difficulty in avoiding the evils of relationship. There were several American purchasers at Cobourg ready to pick up choice animals. We heard of several sales. One cow was pointed out to us for which $450 was paid; another sold for $300; a bull calf, from Mr. Wade's herd, sold for $500; Devon calves sold as high as $100, $200 and $300 each.

The show of horses was quite equal to former exhibitions, though deficient in some classes. The heavy Clydes seem to be going out of fashion, as they deserve. The Roadster, or horse-of-all-work is in our opinion the great want of this country, and this class was not well represented. The prize list only recognizes two classes, "Blood horses," and "Agricultural horses." The heavy draught horse is considered the type of the latter class, and the prizes are adjudged accordingly. There is no encouragement for the compact, active, and really more useful roadster, and he is therefore neglected. There were many complaints against the awards at Cobourg whether well founded or not we shall not pretend to say. We heard it stated that the horse which obtained the first prize was sold a few months since or £25, and is, moreover, incapable of getting a foal! This may have been a calumny but it is a little singular that horses so much more valuable in the estimation of their owners, should be deemed inferior by the judges to a £25 horse.

Sheep made a good show. The number was not so great as on some previous occasions, but the quality was first rate. The Leicester (improved) were the most numerous and attracted the chief attention for weight of body and length of fleece. The Messrs. Miller, who have become quite famous for their Leicesters met this year with a keen competition. Mr. C. Walker (of London), obtained the first prize for a ram of two shears, and pressed them hard in other classes. There were two or three pens of pure South Downs that were also much admired. Some of them were importations from the celebrated flocks of Jonas Webb. Mr. Spencer, of Whitby; Messrs. Gordon, of Paris; and Mr. Stanley of Haldimand, were the principal exhibitors. Merinos and Saxons were not numerous, but quite equal to those we have seen at American State Fairs. Mr. N. Choate, of Hope, and Mr. J. Rymal, of Barton, were the only exhibitors in this class. Fine-wooled sheep are not popular with Canadian farmers. They are not to be compared with the English breeds for mutton, and the wool-dealers will not pay a sufficient price for fine wool to make up the deficiency. Cotswolds and Chevkits, (the latter, we believe, for the first time,) appeared at this exhibition, and attracted a good deal of notice. The Chevoits are a hardy-looking sheep, not unlike the old Canadian breed in appearance, except that they are shorter legged. We doubt not they will thrive well in this country, especially in such townships as Caledon, Mono, Adjala, &c. The Cotswolds did not come up to the standard which this breed has attained in England. They were considerably smaller than sheep in adjoining pens which were shewn as Leicester, but which were evidently crosses with the Cotswold.

Pigs, both the large and small kinds, were good but not remarkable. We have so little fancy for the grunting tribe, that we confess to some neglect in their case. In poultry the show was generally admitted to be inferior. The mania on this subject especially for long-legged Shanghais, is evidently passing away.

Agricultural implements are annually changing their form, and, in many cases, with evident advantage to the farmer. Reaping and mowing machines are assuming a *Canadian* form, and thus becoming adapted to the circumstances under which they

must be used in this country. We noticed several decided improvements, which we may refer to on some future occasion. There were some new contrivances—at least new to us, and claimed to be new by the exhibitors—which promise to be useful. One of these, a washing-machine, we have tested in our own family, and can speak in its favour. It is got up in Markham, and was invented by Mr. A. Anderson, of Unionville. It operates on the "pounding" principle, and, like all really useful inventions, is simple in construction. The dash, or "pounder," is suspended from a rope which connects two upright spring boards, placed on opposite sides of the tub, and morticed into a sill, on which the tub stands. By a slight touch, the "pounder' is made to descend, the upper ends of the springs are' drawn together, and by their resilience, or "spring,' it is thrown up again. Thus a succession of blows is produced with no more effort than a child of twelve years is equal to. The "pounder" is ingeniously constructed. The part which comes in contact with the clothes consists of twelve or fourteen pestles, about an inch and a half in diameter. These are fastened with springs, so as to recoil about an inch at each blow. The result is that the clothes are *squeezed*, not struck by the "pounder," and therefore but little worn or injured. Less soap, which is dear, and more water, which is cheap, are required with this machine, than any other. It is unquestionably a *labour-saving* machine—labour-saving in a case where it ought to be saved, at the *wash-tub*—and for this reason we call attention to it.

There were several machines and implements which we should be glad to notice, specially, did our space permit.

The fruit department was good, but not equal to former years. The season has not been favourable, yet Mr. G. Leslie of the Toronto Nursery, Mr. Lovekin, of Darlington, and a few others, exhibited some very tempting specimens.

In manufactures, the display was also less extensive than on former occasions, but still evidencing progress. The earthenware and drain tiles of Mr. Brown, of Bowmanville, especially attracted our notice. We are glad to hear that Mr. Brown is about removing to this city, where the clay is better adapted to his purpose, and where, we hope, the demand for his manufactures will be more extensive.

In a financial point of view, the exhibition at Cobourg was not equal to some of its predecessors. The rain on Thursday (the first public day) prevented large numbers from visiting the grounds, many of whom probably would have purchased dollar badges to secure the *entree* during the fair.

PRESIDENT'S ADDRESS.

At two o'clock, the President delivered the annual address to a large assemblage, who testified the pleasure with which they listened to it by frequent applause, He spoke as follows:—

Farmers of Canada,—

I approach the usual duty of addressing you with diffidence, when I call to mind the many distinguished persons who have proceeded me as Presidents of the Agricultural Association of Upper Canada.

On any occasion it is deeply interesting to witness so large an assemblage of earnest and intelligent men congregated for the purpose of cooperation in the glorious work of moral and social improvement In the midst of much that is debasing and degrading, it is delightful to know that there are times when the traces of God's own image in man lead him to exult in doing good; when animosity, national prejudice, and bitter party spirit, all having been laid aside, he rejoices in advancing the best interests of his species, and hastening the time, when men "shall beat their swords into ploughshares, and their spears into pruning hooks: nation shall not lift up sword against nation, neither shall they learn war any more."

We claim this position of patriotism and benevolence for annual gatherings of the Agricultural Association. Save Christianity, there is no civilizer so potent as an enlightened system of husbandry. There is no more reliable criterion of the status of moral and intellectual culture in any nation, than a high state of Agricultural improvement. If you point to any place where the blessings of liberty and peace are best understood and most perfectly-enjoyed, there you mark a country whose yeomanry are men of understanding, and high principle. A sure consequence of this state of things is national prosperity and wealth. No where in the wide world can prosperity be found attending an ignorant and indolent people.

We think we can mark in each succeeding exhibition unmistakable proofs of the rapid progress which Canada is making in the social scale. But such evidence is not confined to our Provincial Exhibitions. At the Industrial Exhibition of London, New York, and Paris, those great milestones in the pathway of the world's progress, the word "Canada" is broadly marked.

At these feasts of in gathering and first-fruits let us not forget deep gratitude to the Giver of all good While other countries have been the seat of war. pestilence and famine, we have been dwelling safely in the cultivation of our fields, and general agricultural improvement. And together with this gracious dispensation of his providence to us, "He has crowned the year with His goodness and His paths have dropped fatness," causing man and beast to rejoice in abundance.

Since our last meeting the bonds of amity and peace between the United States and Cadada, have been strengthened by a relaxation of their and our revenue laws. The Reciprocity Act has been, and

will be, of great service to them, and to us. In the race of commercial competition the farmers of America have an important place. The removal of absurd and injurious restrictions on the freedom of trade, cannot fail to exert a very beneficial influence on their material wealth and progress. Those who consume our surplus produce also, derive benefit in the facility of access to our market now afforded to them. For this boon, the farmers of Canada are largely indebted to the unwearied exertions of the Hon. Mr. Merritt.

While congratulating ourselves on the rapid strides which Canada is making, I am anxious to press on your attention the subject of Agricultural Education, as the great instrument of promoting our prosperity. This may seem a work of supererogation. Man generally assents to the proposition that "Knowledge is power," yet it is a fact that Agriculturists, as a body, do not act on this principle; I mean in so far as regards the Science of Agriculture. Many strange notions exist in reference to it, and so very much is it neglected, that the language of the old Roman author seems almost applicable to our own time and country—"Nothing," he says, "equals my surprise when I consider that while those who desire to learn to speak well, select an orator whose eloquence may serve them as a model; while those who are anxious to dance, or become good musicians, employ a dancing or a music master; in short that while everyone looks for the best master, in order to make the best progress under his instructions, the most important science, next to that of wisdom, has neither pupils nor teachers. I have seen schools established for teaching rhetoric, geometry, music and dancing, &c., and yet I have never seen a master to teach Agriculture, nor a pupil to learn it." It is a very common opinion that education unfits men for labour, and that the only man who will assiduously persevere in it, is the ignorant and the illiterate. This is a very absurd idea. When you set an illiterate man to do a piece of work, if he obeys you it is from the mere habit of obedience to precept. Now this habit cannot ensure a proper performance of the duty required. Your only security is in the intelligence which the man can bring to bear on his task. He must understand the "how and why" of the process, or his efforts may be misdirected. The really intelligent man, should his moral faculities be in proper exercise, will do his work from a conviction that it is reasonable and proper that it should be done in the way pointed out. Nothing can be more pernicious in practice than this false estimate of the effect of education. The mass of Canadian farmers till their own land, and the labour is chiefly performed by their own families. Should they train their families on the principle that labour and education are incompatible, how fearful would then be the result as respects our social and industrial position? Fortunately, the youth of Canada are enjoying the blessings of a Common School system, which is the glory of our land, and the honour and pillar of the State. They cannot, therefore, be illiterate. But they do not receive that kind of education that will fit them for the proper exercise of the profession of Agriculture. Here lies the whole cause of the difficulty. Many farmers give their sons a liberal education, expecting that, when they shall have gone through their course of instruction, they will return to agricultural pursuits. In the majority of cases, the young men go to other professions, much to the chagrin of their parents, who at once conclude on sending no more of their sons to get a liberal education. Their neighbours, influenced by their opinions, follow their example. They never once attribute the effect to the proper cause; namely, that they gave their sons that kind of education which excited a taste for, and qualified them for practising other pursuits than that of Agriculture. Would it be reasonable for a parent who had bound his son to serve an apprenticeship to a shoemaker to expect that, at the end of his term, he would turn his attention to blacksmithing, and at once be proficient in it? So with any other trade. And as it is impossible to gain proficiency in any undertaking without the preparatory processes necessary to give that proficiency, so it is with Agriculture. Another cause of many of our youth engaging in other professions is the low estimate which is formed of the dignity of labour. This is producing a most vicious state of feeling. A sort of sickly sentimentality, vanity, conceit and folly, drive numbers of young men to other occupations. They seem to think that no one has any claim to respectability, or can hope to rise in the world, unless he be a physician, merchant, lawyer, &c. They draw vivid pictures of the success that shall attend their path through life, and of ease and comfort which they shall enjoy when emancipated from what they consider the toil and drudgery of a farmer's life. They crowd into our towns and cities, where many of them exchange purity of life and manners, and a noble profession, for vice, dissipation, disappointment, and, too often, a miserable end. This state of feeling prevails to an alarming extent, and must be promptly and vigorously met, or the sun of our prosperity will soon be obscured. Where, then, is the remedy? The work must begin with ourselves. You have, by your apathy sanctioned the degradation of your profession. You have permited other men to form a low estimate of it, and to usurp that position which in common with them you should occupy. What secular pursuit is superior to yours, either in point of honour or usefulness; yet by many it is not so deemed. I have heard men, from whose education better things might have been expected, talk contemptuously of the men who wear homespun. Make the frieze coat respected. Don't think and say that labour and education are incompatible. Teach your young men that they ought to be educated. Give your sons not merely good common school instruction but a liberal and *thoroughly scientific Agricultural education*. And, when they shall have finished their curriculum, instead of looking for them in the crowded city, engaged in other avocations, you will find them beside you, attached to your own honorable calling, aiding you with enlightened counsel, and comforting you in the evening of life. Do men in any other walk of life, treat their professions disrespectfully? Are they not all eager to bring the light of science to bear on them? Is it less necessary for yours. Nothing is hazarded by asserting that its aid is becoming absolutely indispensible. It is true we have got on to some extent without much scientific knowledge, but the time is at hand when a different course must be pursued. The old system does well enough while the large deposits of organic matter last. With a virgin soil and abundance of vegetable manure, there is little difficulty in raising abundant crops. This stock is nearly exhausted, and other modes of cultivation are needed. Professor Johnston, who visited Canada some years ago, adverts to this subject which ought to rouse us to action. Although the picture he has drawn may be too highly colored, yet there is so much truth in the reference that I am induced to quote it,—"as to the condition of agriculture, as an art of life, is cannot be denied that this region, as

a whole, is in a primitive condition. In relation to English markets, therefore, and the prospects and profits of the British farmer, my persuasion is, that year by year, our transatlantic cousins will become less and less able, except in extraordinary seasons, to send large supplies of wheat to our island ports And that when the virgin freshness shall have been rubb d off their new lands, they will be unable, with their present knowledge and methods, to send wheat to the British market so cheap as the more skillful farmers of Great Britain and Ireland can do. If any one, less familiar with agriculture, doubt that such must be the final effect of such an exhausting system, now followed on all the lands of North America. I need only inform him that the celebrated Lothian farmers, in the immediate vicinity of Edinburgh, who carry all their crops off their land, as the North American farmers now do, return, on an average, ten tons of well-rotted manure every year to each acre, while the American farmer returns nothing."

Such is the estimate of our position and prospects, formed by one who is well qualified to judge, and our own experience will soon attest its truth. The question now is, shall Canada maintain and advance her status, or shall she retrograde? There is not a man here who does not respond " we shall not be second in degree to any farmers in the world, and our country shall be as prosperous as theirs.

I would not be understood as wishing to undervalue in the least degree the labours of the early settler. His toils and privations are written, indelibly, on the page of his country's history. I have not lived 22 years in Canada without knowing something of them, or be unable to appreciate them. When I look around me and see so many venerable looking men, whose grey hairs gather to the olden time, the imagination can portray very different scenes from those which now meet our view. There are those here who can look back to the time when the only building on the place where Coborg now stands, was the old bakehouse, where supplies of bread were obtained by the few seafaring men who crept along the coast, with their scanty cargoes of merchandice or military stores In those days there were none of the floating palaces which now minister to the ease and comfort of travellers. But if discovery and progression have been rapid, it is because the first steps were taken so securely by the " Pioneers." The solitary axe in the wilderness seemed but a hopeless instrumentality, but it was a sure precursor of our present prosperity. The jaded ox team of the early settler, winding its way through the almost tractless forest, like a forlorn hope, was an earnest that to day the Iron-horse would with gigantic strength, and with almost the speed of lightning, dash along the remotest parts of the Province.

To return to the subject of agricultural education. It has been already hinted that for the learned professions, thorough training is imperative. This is also the case with every trade. A man is not deemed competant to make a coat or a shoe, who has not served an apprenticeship of several years. Yet men are expected to manage farms who are mere tyros in experience, and in a great measure ignorent of the science of agriculture. If the next generation of farmers could be well educated in their profession, it is almost impossible to estimate the vast change which would take place in the world's progress. What is needed is, Education, in the true and proper sense of the term, namely, the through training of the mind with a special reference to the practice of Agriculture. It includes the theory and practice of the professions, neither separately, but both combined. Theory alone cannot make a man a good farmer. In order either to do work well or to be fitted to direct others in the performance of it, a farmer ought with his own hands to have gone through the process. A young man, when commencing his course, should begin at the rudiments, and progress step by step to its completion ; doing with his own hands daily, the labour in each department. But together with the correct practice of farming, he must call in the aid of science in order to make him a good farmer. Science must assist him by telling what sustenance each kind of crop requires, whether it be organic or inorganic, and from careful analysis of the soil, whether such subtances be among its component parts, and in the necessary proportions. No amount of merely practical skill can in all cases indicate this ; science alone can determine it. How often is the merely practical man bitterly disapointed when, after preparing a field in his usual way, he finds that the crop falls far short of his expectations. Such failures cannot be accounted for by any incidental and obvious causes ; there is the want of *something* to complete the amount and kind of food necessary for the crop, but he can't tell what that *something* is. Here science must aid him, or he will be left to grope in the darkness and mist of uncertainty. We learn much from the book of experience, but its teachings are vague and uncertain, unless we are somewhat acquainted with the laws which regulate the universe. A physician practising his profession in ignorance of general principles, and trusting to his experience, might avoid doing much mischief in ordinary cases, but in those of complexity and peril, he would be completely at sea and utterly helpless. The like case is that of the farmer who has no scientific knowledge. He may indeed wish to read correctly the laws of the physical world, but this he cannot do accurately without science. This is the difference between the empirical and the scientific physiologist. The empiric is contented with observing and recording the resulting fact, while the scientific physiologist must ascertain the manner in which physiological laws operate. The attention of the one is directed to results in the improvement of his art, and that of the other to the enlargement of his stock of knowledge. There is a strong tendency in those two methods to combine and unite in one grand result. That they do combine is unquestionably true. All science is true, and the result of the operation of the great principles which it teaches must be exactly in accordance with it. Now, the object of the science of agriculture is, to construct a scheme of knowledge which shall not only explain results, but be a guide to the evolution of correct systematic practice. This identity of result is not merely important as respects the discoveries and improvers, but to man as man, elevating him morally and intellectually, and providing largely for his temporal wants.

It is often painful to witness the apathy which exists in reference to the acquisition of agricultural knowledge. Worse than this is the hostility of many practical men to what they term " Book-farming." They seem to have an instinctive horrer of all knowledge but that which is acquired by themselves in their own sphere of observation. And they have no idea of imparting the benefit of their experience to others. They selfishly forget, that they have learned something, of which at the outset of their career, they were ignorant. They say that they had to acquire their stock of kowledge from experience through life, and it is only fair that others should go through the same ordeal, Hint to them that even they might be benefitted by the experience of others, and they

will tell you that they know all about farming that they don't believe in discovery and progression. "No doubt they are the people and wisdom will die with them." Such men are the exception. The Farmers of Canada as a class are intelligent, and desirous to keep pace with the age. They see other professions advancing rapidly; they feel that this is an age of progress, and that the farmer who wilfully shuts his eyes on the light of day, is of all men the most criminally ignorant, because he does what he can to degrade and impair the usefulness of a profession which supplies not only the elements of existence to every human being, but furnishes marerials for many other pursuits.

Having thus stated that a liberal and scientific education ought to be the portion of every farmer who wishes to excel in his profession, the remaining point to be glanced at, is the instrumentality by which it is to be obtained. And I wish now more particularly to direct your attention to the means for educating the rising generation. A considerable part of the training of every young farmer in early life, indeed the greater part of it must be got at home. Every farmer can teach his son a great deal of the practice, and some, a part of the science of the profession of Agriculture. But however well qualified many are to give instructions and to avail themselves of their leisure hours to impart it, yet, unaided by public instruction, the mind cannot be fully developed in the science. However good private tuition is, yet it is an acknowledged fact, that apart from public instruction, it fails to produce a well developed mind and character. The experience of men in all ages has been that the work of giving instruction can only be well done by those whose special business it is. It is the only rational and effective plan, and we have an Institution of this kind. In University College, there is an Agricultural professorship, and connected with it an Experimental Farm. As you are aware our worthy Secretary Mr. Buckland, is Professor of Agriculture. He combines those qualities which are necessary for his position; he has not only scientific attainments of a high order, but he has been long a practical farmer. He teaches the History, Science and Practice of Agriculture The Professors of Chemistry, Natural History, [including Botany and Entomology] Geology and Mineralogy give special Lectures on those branches of Scientific Agriculture which belong to their respective departments. As an incentive to Students, the Senate of the University have erected *Five* Scholarships in Agriculture, of the value of £30 per annum each. Professor Buckland, in order as much as possible to suit the convenience of young farmers who cannot spare their whole time, has very considerately fixed the commencement of his course in November. It ends in March. Young men can thus be absent from home for instruction during that portion of the year when they can best spare the time. It is to be regretted that this most important institution has not been patronized as it should have been. Comparatively few have availed themselves of the advantages thus offered.—While the Agricultural Schools of Cirencester, Edinburg and Templemoyle in Great Britain, of Grignon and Roville in France, of Hohenheim and Moeglin in Germany, of Holtbeck in Flanders, and Howyl in Switzerland have their crowds of eager students, our Canadian School of Agriculture is almost tenantless. This ought not so to be. Unless we rouse to action, we shall fall far behind in the race of Agricultural improvement. In a country where Agricultural societies are so much appreciated and so literally supported, why is it that we pay so little attention to the acquisition of that kind of knowledge which is their mainspring, and which more than anything else will contribute to the improvement and wealth of Canada Let us do our duty in this matter; the interests of the country demand it.

Gentlemen. I have thus gone at length into a subject which is of the highest importance. It has been the principal topic of my address. But I am unwilling to conclude without making a few remarks on the cultivation of wheat, the great staple of the country.

Our mode of farming differs essentially from that now pursued in Britain. We have no course of rotation of crops, which there is generallypractised. Their system is the four years' course—turnips, barley or oats, clover and wheat. Summer fallowing is seldom resorted to, as it is considered that the land can be sufficiently freed from weeds and grass by the hoeing and working of the land required for the turnip crop. The farmers of Great Britian have no difficulty in raising abundant crops by this process, and the application of the various kinds of manure. There can be no doubt, that, for them, their system is excellent and highly remunerative. Their method of tillage is:—After the wheat crop is harvested the land is pared and ploughed In spring, it is ploughed twice, and sometimes thrice, for turnips. In the next spring, it is ploughed once, and sometimes twice, for barley; so that the sheep droppings may be well mixed with the soil, and thus ensure an even crop. The third crop—clover—is sown with the barley or oats, and gives a year's rest to the teams, until the land is broken up with one ploughing, and sown with wheat, the fourth crop.

The great difficulty in the way of the introduction of this course into Canada, is, the turnip crop. It is not meant that its cultivation would not be productive of highly beneficial results, but that the amount of labour which is necessary for it is almost unattainable in the present state of the country. The principal part of the labour is not in the preparation of the soil for sowing, but in the after tillage and harvesting. In England, there is no difficulty in procuring any number of labourers, at any given time, and at a moderate rate. Here the case is entirely different. At some seasons, it is very difficult to get men; and the busy time with the turnip crop is during one of those seasons—namely, wheat harvest. In this climate, turnips ought not to be sown before the end of June; if sown sooner, they become dwarfish, and rot readily. We usually begin wheat harvest about the 17th July; so that, if the turnip crop be sown in the end of June, the proper time for thinning and hoeing it would be during harvest, when, to attend to it would be to neglect the wheat crop, and run the risk of losing it. Then, the plan of feeding them on the land, as in England, would not answer in Canada after the middle of November, as the severe frost would render it impossible for sheep to eat them. Neither could they be allowed to remain in the ground during winter, as the severity of the weather during that season would completely destroy them for food To make the crop valuable, it would be necessary to house it, which would require a large amount of labour. Turnips can only be raised to advantage on a small scale, for winter food for cattle and sheep, not to the extent of the fourth part of the available land of every farmer. As a substitute, Indian corn has been tried; still, it has the disadvantage of being a cereal—carrying off from the soil some of the same

substances which constitute the food of other plants of its class. In fact, in the absence of root culture, it is a very difficult matter to have a proper system of husbandry. However, even a change of cereal crops is better than no change at all. The system of planting corn after wheat, then barley or oats, then clover, and afterwards wheat, is much practised in the United States and Canada. This course has been found to answer well. It would give, consecutively, one fourth of the cultivated land on a farm for turnips, potatoes, corn, and peas; one fourth for barley or oats; one-fourth for clover, and one-fourth for wheat. Were this plan pursued, and all the farmyard and artificial manures applied during the first year of the course, except gypsum on clover, I have no doubt that farming would be more lucrative than at present. All the crops would be more abundant, and there would be more system and regularity about the work of the farm than now prevails.

In the mode of tilling for wheat, the first and great point is to drain the land. In many places in Canada, the soil is so wet that wheat cannot be sown with even the probability of a fair return from it. A large portion of the land is of this character. The really first-rate wheat land in Canada, as in the State of New York, is limited in extent. I admit that a great deal of land is sown with wheat, but I do assert that the result fully bears out my opinion than in its present state, that is while wet and undrained, a great deal of land is sown with wheat which ought not to be sown, for it only results in failure and disappointment. The first step then is thorough draining where it is needed, on all lands intended for the growth of wheat. Wheat must have dry soil or it cannot grow well. The Genesee country and other districts famed for the growth of wheat are dry. The soil in those places being gravelly, forms a permanent drain for superabundant moisture. It is gratifying to know that public attention is being directed to the subject of drainage, and I gladly embrace this opportunity of urging its general adoption.

The next important point in the cultivation of wheat is deep tillage. The old furrow of six inches deep and nine wide won't do. The roots of the wheat plant must have no such obstruction as hard pan at the depth of seven or eight inches. The land land ought to be turned to the depth of twelve or fifteen inches. The plan of turning a sleek painted furrow, may be very well as a piece of fancy work, but will not answer practical purposes. Change your rules at your ploughing matches. For the narrow and shallow furrow substitute a wider and deeper one, carry the rule to your farms and you will find a vast difference in the produce per acre. Instead of breaking up your summer fallows or clover sod with two horses, do it with three or four, or with what is an excellent plough team, a span of horses and a yoke of oxen.

A very essential matter is to clean the land thoroughly from grass and weeds. The great enemy to wheat is spear or couch grass, and it is a very difficult one to get rid of; if not checked it bids fair to take possession of our best wheat lands. In England it gives a great deal of trouble, and the wish to get rid of it, has led to various expedients. The old system of summer-fallowing, although partially successful, was found to be expensive and not so thorough in its effects as was desired; it cost a great deal of labor and did not do the work effectually. The best English farmers set it down as a system requiring double the number of teams necessary for the present improved mode. They discovered that the mere ploughing of land did not kill the grass, and that even four and six plowings did not eradicate it that even after all it still lived and infested the soil. They now act on the principle that to destroy speedily and effectually the vitality of a plant, it is necessary to cut off the communication between the roots and leaves, because no plant can long survive without coming into contact, above ground, with the atmosphere. They found that the *ordinary plough, unaided by any other implement*, cannot effect this object. In England they use what is termed the "paring plough," one kind of which, (Bentall's) cuts the ground to the depth of two or three inches, another, (and I think the preferable one, Kilby's,) not merely pares but turns over the ground.—After this paring process, the ground is plowed deeply; thus the grass is buried at a considerable depth, where it remains undisturbed, to serve as manure. In the Genesee country, as in other places in the U S., a rather different plan is pursued, still the principle is the same. There the ground is pared and ploughed at the same time, by an admirable implement called the Michigan subsoil, or double mould board plough. It consists of two ploughs, placed one before the other on the same beam. The forward one takes a furrow slice two or three inches deep, separating the tops of the grass from the roots, and lays its slice in the bottom of the previous furrow; the hinder one follows, raising a furrow slice eight or nine inches deeper, which it lays on the slice cut by the forward mould board. During the process of ploughing the soil is broken and mellowed, so that the work of harrowing is afterwards easily and well done. The grass is so deeply buried, that harrowing or even light ploughing cannot afterward bring it to the surface, to waste or grow again. Land ploughed with this plough, during the late wet season after lying without being harrowed for six or seven weeks, scarcely showed a blade of grass, while land in an adjoining field, ploughed with the ordinary plough, and afterwards well harrowed, was quite green. The reason is obvious. Sod ploughed in the ordinary way sends grass through the seams of the furrows as soon as turned over. This grass spreads through the furrow-slice binding the whole together. When cross ploughed the sod is not rotted, but is turned over in square pieces, which can scarcely be shaken apart, thus the wheat is sown to struggle among sods and grass which grow again and choke the young plant. The practice of turning up again clover, which has been ploughed down for manure, is certainly not in keeping with the idea that in order to be of service, manure must not be much exposed to the action of the atmosphere. What good farmer would allow manure to lie bleaching on the surface of the ground? Is it more sensible to cross plough clover sod? How is it possible to get rid of couch grass when we plough up half-rotten sod? The mode now pursued in the best wheat districts of New York is to plough down clover in the middle or end of June, with the double plough. The land is harrowed thoroughly as soon after ploughing as possible. About the middle of July it is *turned over* to the depth of three inches with the "gang-plough" an implement with four small ploughs fastened to a beam resting on two wheels. It can be raised or lowered to the depth required, and is regulated by a pole to which the horses are attached. *Unlike the cultivator, it turns effectually the surface* of the ground over which it passes. It is drawn by three horses abreast.

After the first working, should any grass appear, the land is again gone over with the "gang-plough." Before seeding it is harrowed well. The wheat is sometimes drilled or sown broadcast, and then covered with the "gang-plough." I have seen a great deal of land managed in this way during the present season in the State of New York, which as a bed for wheat was far superior to summer-fallow which was ploughed three or four times. Specimens of the "double-mould" and "gang-ploughs" are on the show-ground. I would earnestly invite your attention to them as most valuable agricultural implements. No good farmer should be without them. Those which I use, were made by Mr. Williams, of West Henrietta, New York.

Gentlemen, I feel that I have trespassed long on your time and must conclude my Address. We have reason to feel proud of the Exhibition which has just closed; it has been inferior to none of its predecessors, and in some respects it has been superior to them all. From this we ought to take courage and resolve, in the spirit of this age of progress, that each succeeding exhibition shall excell all that have gone before it. This is what the world expects from us. Let us remember the honor, dignity, and usefulness of our profession; for in the language of Daniel Webster, "No man is so high as to be independent of the success of this great interest; no man is so low as not to be affected by its prosperity or decline. Agriculture feeds us; to a great degree it clothes us; without it we could not have manufactures, and we should not have commerce These all stand together, but they stand together, like pillars in a cluster, the largest in the centre, and that largest is agriculture. Let us remember, too, that we live in a country of small farms and freehold tenements; a country in which men cultivate with their own hands their own feesimple acres, drawing not only their subsistence, but also their spirit of independence and manly freedom from the ground they plough. They are at once its owners, its cultivators, and its defenders And, whatever else may be undervalued or overlooked, let us never forget that the cultivation of the earth, is the most important labor of man. Man may be civilized, in some degree, without, great progress in manufactures, and with little commerce with his distant neighbours. But without the cultivation of the earth, he is, in all countries, a savage. Until he gives up the chase, and fixes himself in some place, and seeks a living from the earth he is a roaming barbarian. When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization."

The President having finished reading the above address,

Colonel Thompson said he was sure all present were satisfied that they were making progress in the selection of their Presidents. The admirable address to which they had listened gave them a very high idea of the abilities of the gentleman who had delivered it—[applause]— and he presumed they were all anxious to have an opportunity of reading it in their habitations [Applause]. He therefore moved that the thanks of the Association be given to the President for his excellent address, and that he be requested to furnish a copy for publication.

The motion was carried by acclamation.

Rounds of cheers having been given for the Queen, our noble Allies, the Governor General, the Farmers of Canada, and the President of the Association, the Secretary, (Professor Buckland.) proceeded to read the Premium list, and with this terminated the business of the Show, with the exception of the payment of the premiums, which is necessarily a work of time.

THE DINNER TO THE GOVERNOR GENERAL.

In the evening the Dinner given to his Excellency by the Local Committee took place in the Globe Hotel. Near a hundred gentlemen were present.

Sheriff Ruttan, Chairman of the Local Committee occupied the chair, having at his right the distinguished guest of the evening, His Excellency the Governor General, Hon. Adam Fergusson, Professor Buckland, and R. L. Denison, Esq. On his left the Chairman was supported by David Christie, Esq, M P P., President of the Agricultural Association, Honorable Inspector General Cayley. Hon Geo. Boulton, E. W. Thomson, Esq, and Major E T. Campbell.

The vice-chair was occupied by D'Arcy E. Boulton, Esq., Mayor of Cobourg, supported on his right by Sir Allan Macnab, Lord Bury, and Captain Retallack, and on his left by Hon. J. A. Macdonald and Hon. Robert Spence.

The chairs at the ends of the tables were occupied by Baron de Longueuil, Wm. Weller, Esq, and Asa A. Burnham, Esq.

Among the other gentlemen present we observed J Langton, Esq., M. P P., Archdeacon Bethune, Thos Street, Esq., H. J. Ruttan, Esq., C. H. Morgan, Esq., Col. Marks, Judge Boswell, Judge Hall, Peterboro', Sheriff Conger, Peterboro', A Fraser, Esq, Professor Tillotson. J B. Fortune, Esq., G. A. Barber, Esq, James Cockburn, Esq., A. Secor, Esq., W. Graveley, Esq, &c, &c.

The CHAIRMAN, before proceeding to the toasts of the evening, explained that the reason why he presided instead of the President of the Association, was his position as chairman of the Local Committee. His Excellency the Governor General, who had honoured them with his presence, must have found it a very difficult matter to accede to their request that he should meet with them that evening, although he was sure that it would have been with very great reluctance that his Excellency would have foregone the pleasure of meeting so many of the farmers of Upper Canada on the present occasion. In these circumstances they felt a special indebtedness to his Excellency for honouring them with his presence, but they must recollect that he must have been subjected to greatfatigue while travelling night and day from Quebec during the last three or four days, and it would therefore be incumbent on them to make as short speeches as possible.

The CHAIRMAN then gave in succession, "The Queen," "Prince Albert and the Royal Family," and "The Emperor of the French and our noble Allies"—all three toasts being drunk with much enthusiasm.

The CHAIRMAN then said—I am now about to propose the health of our noble and distinguished guest. [Cheers] It is a toast which we have rarely an opportunity of hearing responded to in the town of Cobourg, and I know that this evening it has been at a very considerable personal sacrifice, that His Excellency has condescended to visit us. For this as well as for many other reasons, I am sure that every individual in the room will most cordially respond to the toast I now give—"the health of the Governor General."

The toast having been drunk amidst great applause,

The GOVERNOR GENERAL rose to reply. He said —Mr. Chairman and gentlemen of the Agricultural Association of Upper Canada—before proposing my health, Sheriff Ruttan took occasion to observe that I had come here at considerable personal inconvenience. I did not consider, however, that there was any difficulty in that respect. I was anxious to come here on many accounts, and the difficulty arose simply from my having made all my previous arrangements, and those arrangements affecting other people whom I did not exactly care to put out of their way in order to please myself. But I am exceedingly glad that I have been able to arrange to meet the Agricultural Association of Upper Canada. Of personal inconvenience to me there has been none, but had it been ten times greater than you supposed, I would willing have undergone it for what I have seen to-day. (Cheers.) I was anxious to be present with you on several accounts. I would be anxious to have the opportunity at any time of meeting a body of gentlemen connected with agriculture, that which I consider to be the staple occupation of Canada, and most contributing to her prosperity, what I hope will be her great and signal prosperity and progress in the history of the world. [Cheers] I would have been anxious to meet such a body of gentlemen at any time, but I was more particularly anxious to do so, on the first occasion of my setting foot in the Upper Province, after assuming the trust and confidence reposed in me by our gracious Queen in appointing me to act as her representative here. I need say no more on that point. I can see that the Agricultural Associations of Upper and Lower Canada are respectively at once the means and the measure of the progess of the country. They not only diffuse information and afford a stimulus which urges one into a generous rivalry with every body around him, but they measure from year to year the progress that is made in that most useful of all sciences and of all arts, if I may so call it, the application of theory to practice. I have been told this very day by gentlemen who recollect the last agricultural exhibition in Cobourg that the progress they observe is most gratifying. They see the effect of these exhibitions growing from year to year. They mark in the same district among the same individuals, or among the sons and descendants of those individuals how the breed of stock and the growth of grain have improved, and how the benefit of science and industry has been poured out upon the soil, until it has produced that abundance which at the present moment enables you to pour the superfluities of your granaries into France and England, and to possess the character of being really one of the great wheat producing countries of the world. [Cheers.] Such Canada is already, and I trust she will long remain so. [Cheers.] I have said that I am happy to meet the Agricultural Association on my first entry into Upper Canada. And I am especially happy to meet you at the moment when the heart of every subject of our Gracious Queen must throb with exultation at the latest glorious triumph of the French and British alliance. [Loud Cheers] I take that alliance to have a significance and an importance in the history of the world, which people at the present moment cannot appreciate. I see those two flags hanging there side by side and I rise just after hearing your drink with proper enthusiasm the health of our Queen and the health of the Emperor of the French [Cheers.] I am firmly convinced that if the present war leaves behind it a firm and steadfast adherence on the part of the people of England and France to one another, it will produce greater good to the world than any public event that I know of. [Cheers.] One reason why I look upon that alliance with interest and confidence is, because I believe that it will introduce a complete change into the system of regulating what is called the balance of power. I believe that the alliance of France with England will give a new colour to every public event for centuries to come, and I trust that it may be as firmly cemented, and remain as solid as all that lately passed at Paris seemed to promise to us. (Cheers.) You may say, these events affect Europe more than they affect us. In some sense they do so, but I believe that for the elements of the balance of power hereafter, if France and England are allied, we will have to look to both sides of the Atlantic and I believe that Canada will not be without its weight among those elements. [Hear, hear.] There is also a moral which I shall draw from these considerations of a domestic character, if I may be permitted to do so—not of a political character, but having direct reference to your own present condition. Your Legislature has been settled in Lower Canada for four years. Your members from Upper Canada have been learning the nature of the country, and have been conciliating any prejudices that might exist, by living in good fellowship and brotherhood with their French brethren. And now that the French members from Lower Canada are coming up to live among you for a certain time, and are going to perform legislative duties in the midst of you, I have no doubt that you will heartily welcome them and receive them as brothers. It has struck me lately that it would be one of the most absurd things in the world if the French and English in Canada were to take to quarreling just as the French and English in all the rest of the world are uniting together in amity. I think it would be one of the most foolish exhibitions that could be witnessed. [Cheers] And therefore it is that I have too much confidence in the good sense of the people both of Upper and Lower Canada, to expect ever to see any such thing. [Cheers] I believe you will think that, whatever little differences and difficulties you may have, you must rely on the wisdom of your own statesmen, whom you have among you, if you only choose the right ones as your representatives. Let those men smooth over those difficulties, and devise means for completely getting rid of them, but do not thrust yourselves into measures that will ruin the future consequence and prosperity of your country, for the sake of these petty differences. I have very little more to say on matters of a general character. I have remarked on those matters which give particular importance to the present occasion, and I have spoken as much as I could with reference to the French alliance. And a singular fact comes across me at the moment, that if I were to desire to express my theories of Colonial Government and Colonial Trade in the shortest and most concise manner, I should express them in the words of a celebrated French statesman, who lived in the last century, and who, in a report addressed to the French Ministry, in the year 1776, before the American War was concluded, used nearly the following language:—"Wise and happy will that nation be, which shall first consent to see in its Colonies allied Provinces, not mere dependencies of the mother country." [Applause.] So much for the Colonial Government. With regard to Colonial Trade, he goes on to say:—"Wise and happy will that nation be which will consent to recognize as the only principle of consequence in commerce the employment of

all its lands in the manner most advantageous to the owners of those lands, and all its labour in the manner most advantageous to the individual labourer that is, the manner in which every man would use both of them, if he were permitted so to do, for his advantage." I have quoted these words, the language of a French statesman, because I do not think it would show a bad disposition to be on good terms with our French brethren in Lower Canada. Nothing more remains to me but the agreeable, although difficult task, of returning you my hearty thanks for the reception you have given me, and the honour you have done me in drinking my health. Be assured I shall ever look back on my visit to Cobourg, and my meeting with the Agricultural Association, with the greatest pleasure.

His Excellency again rose, and asked permission of the chair to propose a toast, with reference to which, after the remarks he had already made, he had nothing more to say, because he believed he had expressed his sentiments fully as to the objects of the Association. But he could not leave this room without proposing "Success to the Agricultural Association of Upper Canada," not only for this year, but in all coming years. [Loud Cheers.]

D. Christie, Esq., M.P.P, President of the Association, responded. The members of the Association could not but feel very highly the compliment which His Excellency, in proposing, and this company by the manner in which they had received that toast, had just paid them, and the very flattering terms in which His Excellency had spoken of that Association and of the benefits it was calculated to confer, would be fully appreciated by every farmer in Canada. [Applause.] His Excellency had stated that the success of those exhibitions was one of the criterions by which they could measure the progress of the country. The remark was susceptible of a still wider application, not confined to this Province. At those great milestones in the pathway of the worlds progress, the Exhibitions of London, New York, and Paris, Canada occupied a prominent position [Cheers.] But it was mainly owing to the efforts of this Association that at those Exhibitions Canada had attained so high a rank. [Cheers.] They had reason, as His Excellency had remarked, to feel proud of the Exhibition they had to day. [Cheeers.] It certainly surpassed all its predecessors, and they were in no small degree indebted for the progress they had made to the vigorous assistance which had been rendered to the Association by the inhabitants of the town of Cobourg. The Mayor and Corporation had in every possible way given their help, and they had done it effectually. Aided by a very efficient and active Local Committee, the arrangements had been so good as to leave very little to be done by the officers of the Association. Before sitting down, therefore, he would propose as a toast, "The Mayor and Corporation of the Town of Cobourg." [Cheers.]

Mayor Boulton responded and expressed the pleasure it had given him to hear the Exhibition in Cobourg pronounced the most successful that had ever been held in the Province. The people of Cobourg had reason to feel proud on the present occasion. Not only had they the Association here, but the head of the Government who were administring the duties of its several departments. They exhibited their interest in the progress of the country by their presence here, by their coming from a distance to this town to meet them and to enjoy the satisfaction they had all felt in witnessing this great Exhibition of the Agricultural products of this country. He thought it a highly advantageous thing, that the Association, instead of having expensive buildings in one place should hold their annual exhibitions in different districts.—Were it not for this, they could never have hoped to see in the Counties of Durham and Northumberland, 20,000 of their agricultural brethern assembled here to meet the leading gentry and the Governor of our country. After a few more remarks, the Mayor concluded by proposing the health of Major Campbell, president of the Agricultural Association of Lower Canada.—[Cheers.]

Several other toasts were given and responded to by gentlemen from Lower, as well as Upper Canada, but as the remarks had no special reference to Agriculture, we cannot make room for them.

LIST OF PRIZES.

HORSES.

CLASS I.—BLOOD HORSES.

(12 Entries.)

Judges.—Peter Daly, Addington; Duncan M'Farland, Welland; Paul Clapp, Prince Edward; Wm. Hutt, Lincoln.

			£	s	d
Best thorough bred Stallion, George Cooper, York				8	5
2d	do	James Miller, Norval	5	10	
3d	do	W. Byers, Nepean	2	15	
Best thorough-bred two year old Stallion, Alfred Harris, Rice Lake				3	10
Best	do	three year old Filly, J. & J. White, Trafalgar		4	10
Best	do	two year old do do		3	10
Best	do	Mare and Foal R. A. Goodenough, Toronto		5	10
2d	do	J. & J. White, Trafalgar	3	10	
3d	do	G. E. Castle, Cobourg	1	10	

Extra Prize.—Geo Cooper, York, two year old colt, seven eighths bred. Recommended for prize of £2.

CLASS II.—AGRICULTURAL HORSES.

(175 Entries.)

Judges.—David Smiley, York; Robert Young, Lanark; John Masson, Middlesex; P. R. Palmer, Hastings; T. Bell, Peterboro'; W. Powel, Livingston, N.Y.; Rugon Malin, N.Y.

			£	s	d
Best Stallion for Agricultural purposes, T. Nattrass, Cavan				8	5
2d	do	W. Shipley, London		5	10
3d	do	J. & R. Simpson, Markham		2	15
Best Heavy Draught Stallion, Thos Nattrass, Cavan				8	5
2d	do	David Rowntree, York		5	10
3d	do	Jane Ward, Markham		2	15
Best three year old Stallion, Hiram Borland, Darlington				5	10
2d	do	W. Cochrane, Pickering		3	10
3d	do	H. Middleton, Clarke		1	15
Best two year old Stallion, T. Armstrong, Vaughan				3	10
2d	do	W. Miller, Pickering		3	10
3d	do	J. Little, London Township		1	5
Best yearling Colt, James Addison, Etobicoke			2	0	
2d	do	Allen Trull, Darlington		1	10
3d	do	William Ball, Hamilton Township		1	0

Best three year old Filly, Gilbert Jones, Murray £4 10
2d do Trueman M'Evers, Hamilton Township 2 15
3d do Alex Beathe, Darlington 1 15
Best two year old Filly, Wm Miller, Pickering, 3 10
2d do H Balfour, Pick ring 2 5
3d do J Somers, Darlington 1 5
Best yearling Filly, Andrew Smith, Clarke 2 0
2d do E Halliday, Haldimand 1 10
3d do R Brown, Hamilton Township 1 0
Best Brown Mare and Foal, or evidence that the foal has been lost, Jesse Trull, Darlington 5 10
2d do John Simpson, Bowmanville 3 10
3d do H M'Kenzie, Cobourg 1 10
Best Span Matched Carriage Horses, Wm Weller, Cobourg 5 0
2d do R A Goodenough, Toronto 3 15
3d do J Ross, Belleville 2 10
Best Span of Draught Horses, David M'Kay, Darlington 5 0
2d do H Elliot, Darlington 3 15
3d do John Simpson, Bowmanville 2 10
Best saddle Horse, Geo Munroe, Junr, Cobourg 2 10
Best Single Carriage Horse in harness, L Vanderburg, Peterboro' 2 10
2d do Glover Bennett, Cobourg 2 0
3d do M Forsyth, Hamilton Township 1 10
Extra Prize—Recommended for prize Indian Pony, Exhibited by Wm Lindsay, Hamilton Township 0 15

CATTLE.

CLASS III.—DURHAMS.

(120 Entries)

Judges—James Davidson, Brant; John Harland, Wellington; Wm. Mason, York; Geo. Robson, Middlesex; Stephen Benson, Peterboro'; R. M Butler, Ontario.

Best aged Bull, 5 years old and upwards, John Walton, Smith, £10 0
2d do T. Richmond, Gananoque, 6 0
3d do John Jarvis, Trafalgar 4 0
4th do Ralph Wade, Jr, Cobourg 2 0
Best 4 years old Bull, G. Cooper, York 9 0
2d do W H Berestord Whitchurch 6 0
3d do Geo Miller, Markham 4 0
4th do E W Thomson, York 2 0
Best 3 years old Bull, John Wade, Hamilton township 8 0
Best two years old Bull (Imported from England since last Exhibition,) F W Stone, Guelph 18 0
2d do J P Wheeler, Scarboro 4 0
4th do R Wade, Jr, Port Hope 1 5
Discretionary Prize this animal not having been on the ground when the others were examined, Wm Davis, Etobicoke, 6 0

Note: Some irregularity occurred in the awarding of the prizes on 2 year old Durham Bulls. The above is the final decision of the Judges; not yet, however, confirmed by the Board.

Best 1 year old Bull, Jno Simpson, Bowmanville 5 0
2d do M Jones, Bowmanville 2 0
Best Bull Calf, Ralph Wade, Jr, Cobourg 4 0
2d do do do 2 10
3d do John Wade, Hamilton 1 10
4th do Ralph Wade, Senior, Hope 0 15

Best Cow (imported from England since last Exhibition) F W Stone, Guelph £10 0
2d do J P Wheeler, Scarboro' 3 0
3d do do do 2 0
4th do John Walton, Smith 1 5
Best three years old Cow, F W Stone, Guelph 4 0
2d do John Wade, Hamilton 2 10
3d do R Wade, Jr, Cobourg 1 10
4th do John Wade, Hamilton 1 0
Best 2 years old Heifer, G Miller, Markham 3 0
2d do W Miller, Pickering 2 0
3d do F W Stone, Guelph 1 5
4th do G Miller, Markham 0 15
Best 1 year old Heifer (imported from England since last Exhibition,) F W Stone Guelph 5 0
2d do Wm Miller Pickering 1 10
3d do Wm Miller do 1 0
4th do Wm Miller do 0 10
Best Heifer Calf, John Iles, Pinlinch 1 10
2d do G Roddick; Cobourg 1 0
3d do J P Wheeler, Scarboro' 0 10
4th do R Wade, Jr, Cobourg 0 5

CLASS IV—DEVONS.

[76 Entries.]

Judges.—J B Kirby, Jefferson County, New York; George Webb, Jefferson County, New York; William Balkwill, Middlesex; James Bushel, Halton; James Weeks, Welland

Best aged Bull, W H Lock, Yarmouth £10 0
2d do N Choate, Hope 6 0
3d do J B Woolnough, Townsend 4 0
4th do James Minto Haldimand 2 0
4 years old Bull, 3d prize, E Tye, Wilmot 4 0
Best 3 years old Bull, R Ferrie & Co, Doon 3 0
2d do H Borland, Darlington 5 0
3d do E Halliday, Haldimand 3 0
4th do G S Burrill, Cramah 1 10
2 years old Bull, 2d prize, John S Innes, Haldimand 4 0
4th do Daniel Tye, Wilmot 1 5
Best yearling Bull, R Ferrie & Co, Doon 5 0
2d do William Mead Etobicoke 3 0
3d do G E Castle, Hamilton 2 0
Best Bull Calf, W A Lock, Yarmouth 4 0
2d do R Ferrie & Co, Doon 2 10
3d do do do 1 10
4th do W H Lock, Yarmouth 0 15

The Show in this class was very superior.

Best Cow, W H Lock, Yarmouth 5 0
2d do J B Woolnough, Townsend 3 0
3d do W H Lock, Yarmouth 2 0
4th do do do 1 5
Best 3 years old Cow do do 4 0
2d do do do do 2 0
3d do do do do 1 10
4th do do P R Wright, Cobourg 1 0
Best 2 year old Heifer, W H Lock, Yarmouth 3 0
2d do do do 2 0
3d do do do 1 5
4th do R Ferrie & Co, Doon 0 15
Best Heifer Calf, W H Lock Yarmouth 1 10
2d do do do 1 0
3d do do do 0 10
4th do N Choate, Hope 0 5

CLASS V.—HEREFORDS.

(8 Entries.)

Judges.—W Ferguson, Frontenac; Dr Richmond, Leeds; James Duncan, Lanark; Robert Kirkwood, Wentworth.

Aged Hereford Bull, Baron de Longueuil. Simcoe Island £10 0
Three years old Hereford Bull, imported from United States since last Exhibition, William McMicking, Stamford 16 0
Two years old Hereford Bull, Baron de Longueuil, Simcoe Island 6 0
Best Hereford Cow, imported from United States since last Exhibition, William McMicking, Stamford 7 10
2d do do 3 0
Best yearling Hereford Heifer, Baron de Longueuil 2 10
2d do do do 1 10
The Best Hereford Bull of any age not exceeding 4 years, that has served Cows in the Province this season; Prize offered by Baron de Longueuil, Wm McMicking, Stamford 20 0

CLASS VI.—AYRSHIRES.

[41 Entries.]

JUDGES.—Same as Herefords.

Best aged Ayrshire Bull, Mrs. Ewart, Dundas £10 0
2d do Wm Byers, Nepean 6 0
3d do J Patterson, Streetsville 4 0
Best four years old Ayrshire Bull, James Henning, Puslinch 9 0
2d do John Boyes, Amherst Island 6 0
Best three years old Bull, Montreal Agricultural Society 8 0
2d do R L Denison Toronto 5 0
Best two years old Bull, John Boyes, Amherst Island 6 0
Best one year old Bull do do 5 0
2d do R L Denison, Toronto 5 0
Best Bull Calf [under one year], Mrs Ewart Dundas 4 0
2d do John Boyes, Amherst Island 2 10
3d do Mrs Ewart, Dundas 1 10
4th do P R Wright, Cobourg 0 15
Best Cow, R L Denison, Toronto 5 0
2d do John Boyes, Amherst Island 3 0
3d do P R Wright, Cobourg 2 0
4th do do Mrs Ewart Dundas 1 5
Best 3 years old Cow, John Boyes, Amherst Island 4 0
2d do Mrs Ewart Dundas 2 10
Best 2 years old Heifer, John Boyes, Amherst Island 3 0
2d do do do 2 0
Best 1 year old Heifer, Mrs Ewart, Dundas 2 10
2d do do do do 1 10
3d do John Boyes, Amherst Island 1 0
4th do Mrs Ewart, Dundas 0 10
Best Heifer Calf [under one year] John Boyes Amherst Island 1 10
2d do Mrs Ewart, Dundas 1 0
3d do John Boyes, Amherst Island 0 10

CLASS VII—GALLOWAY CATTLE.

(9 Entries)

JUDGES same as Herefords.

Best 3 years old Bull, Wm. Roddick, Cobourg 8 0
Best 1 year old Bull, Geo Miller, Markham 5 0
Best Bull Calf, Wm Roddick, Hamilton township 4 0
2d do do do do 2 10
Best Cow, Geo Miller, Markham 5 0
2d do Wm Roddick Cobourg 3 0
Best 3 year old Cow, Wm Roddick, Hamilton 4 0
Best 2 year old Heifer Wm Miller, Pickering 3 0
Best Heifer Calf, Geo Miller, Markham 1 10

CLASS VIII—GRADE CATTLE.

(64 Entries)

JUDGES—John Dessy, Halton; James Pile, Ontario, R A Hartley, Peel; W A Cooley, Wentworth.

Best Cow, John Dow, Whitby £ 5 0
2d do C Hinds. Haldimand 3 0
3d do Jno Walton, Peterboro' 2 0
4th do Ralph Wade, jr, Cobourg 1 5
Best 3 years old Cow. John Dow, Whitby 4 0
2d do E Powell, Hamilton township 2 10
3d do do do 1 10
4th do T Taylor do 1 0
Best 2 years old Heifer, Jno Dow, Whitby 3 0
2d do do do 2 0
3d do do do 1 5
4th do John Foott, Hope 0 15
Best 1 year old Heifer, J P Wheeler, Scarboro, 2 10
2d do Wm Spar, Haldimand 1 10
3d do Ralph Wade, jr, Cobourg 1 0
4th do do do 0 10
Best Heifer Calf [under one year] John Dow, Whitby 1 10
2d do Jno Wade, Hamilton township 1 0
3d do do do 1 10
4th do B McEvers, Hamilton township 0 5

CLASS IX—FAT AND WORKING CATTLE, ANY BREED.

(31 Entries)

JUDGES—Phillip Armstrong, York; Thomas Smith, do; Daniel Tye, Waterloo.

Best Ox or Steer, G Elliott, Hope £ 7 10
2d do Kirkwood & Lawry, Hamilton City, 5 0
3d do do do 3 0
Best Cow or Heifer, Wm, Bright, Toronto, 7 10
2d do do do 5 0
3d do John Gould, Whitby. 3 0
Best yoke of working Oxen, P Hinman, Haldimand 5 0
2d do, C & T Card, do 3 0
3d do, L Bradley, do 2 0
Best yoke of three-year-old Steers, do do 4 0
Best team of Oxen, not less than ten yoke, from one township, the property of any number of persons. P. Hinman, do 10 0

SHEEP.

CLASS X—LEICESTERS.

JUDGES—Thomas Scott, Addington; James Currie, Brant; John Cade, Ontario; Wm Dickson, Wentworth; J P Wheeler, York; Emanuel Mann, Peterboro'; Alex Thompson, Hastings; Wm Brown, Northumberland.

Best Ram, 2 shears and over (imported from England in 1855) Christopher Walker, London £ 12 0
2d do, W Miller, Pickering, 2 10
3d do Geo Miller, Markham, 1 0
Best shearling Ram, W Miller, Pickering 4 0
2d do, James Petty, Bruce field, Huron 2 10
3d do, Geo Miller Markham 1 0
Best Ram Lamb, Chris. Walker, London 2 0
2d do, Geo Miller, Markham 1 0
3d do, M Jones, Darlington 0 10
Best two Ewes, two shears and over, Geo Miller, Markham 4 0
2d do, James Dickson, Clarke 3 0
3d do, George Miller, Markham 1 10

Best two shearling Ewes, W Miller, Pickering £3 0
2d do. Chris Walker, London 2 0
3d do, do do 1 0
Best 2 Ewe Lambs, Geo Miller, Markham 1 10
2d do, John Snell, Chinguacousy 1 0
3d do, James Dickson, Clarke 0 10

CLASS XI—SOUTHDOWNS.

(59 Entries.)

JUDGES—Geo Fillater, Hastings; John Hanley, Lennox; A D Dougall, Prince Edward; Wm Tye, Waterloo; J W Ball, Lincoln.

Best Ram, two shears and over, John Spencer, Whitby £4 0
2d do R W Stanley, Haldimand 2 10
3d do R & W Gordon, Paris, 1 0
Best Shearling Ram, do do (imported from the United States this year) 8 0
2d do John Spencer, Whitby 2 10
3d do Arnold Burrows, Brantford 1 0
Best Ram Lamb, R W Stanley, Haldimand, 2 0
2d do John Spencer, Whitby 1 0
3d do Richard Coates, Oakville 0 10
Best two Ewes, two shears and over, R & W Gordon Paris 4 0
2d do do 3 0
3d do John Spencer, Whitby 1 10
Best two shearling Ewes, do do 3 0
2d do do do 2 0
3d do R W Stanley, Hadlimand 0 10
Best two Ewe Lambs, J Spencer Whitby, 1 10
2d do do do 1 0
3d do R W Stanley, Haldimand 0 10

CLASS XII—MERINOS AND SAXONS.

[45 Entries.]

JUDGES—Same as Southdowns.

Best Ram, two shears and over, Nathan Choate, Hope £4 0 0
2d do Jacob Rymal Jr., Barton 2 10 0
3d do Nathan Choate, Hope 1 0
Best Shearling, Jacob Rymal, jr, Barton 4 0
2d do Nathan Choate, Hope 2 10
3d do do do 1 0
Best Ram Lamb do 2 0
2d do do do 1 0
3d do Jacob Rymal, jr, Barton 0 10
Best two Ewes, two shears and over, Jacob Rmyal jr, Barton 4 0
2d do Nathan Choate, Hope 3 0
3d do Jacob Rymal, jr, Barton 1 10
Best two shearling Ewes, Nathan Choate, Hope 3 0
2d do do 2 0
3d do do 1 0
Best two Ewe Lambs, do do 1 10
2d do do do 1 0
3d do do do do 0 10

CLASS XIII, COTSWOLDS.

[35 Entries.]

JUDGES: James Paterson, Peel; Wm. Beattie Middlesex; John Iles, Wellington
Best Ram, two shears and over, John Snell, Chinguacousy 4 0
2d do Wm. Smith, Clarke 2 10
3d do Wm. Miller, Pickering 1 0
Best shearling Ram, F W Stone, Guelph, imported from England since last Exhibition 12 0
2d do Wm Miller, Pickering 2 10
3d do F W Stone, Guelph 1 0
Best Ram Lamb, George Miller, Markham £ 2 0
2d do do do 1 0
3d do Wm. Miller, Pickering 0 10
Best two Ewes, two shears and over, John Snell, Chinguacousy 4 0
2d do F W Stone, Guelph, 3 0
3d do do 1 10
Best two shearling Ewes, F W Stone, Guelph imported from England since last exhibition 6 0
2d do do 2 0
3d do do John Snell, Chinguacousy 1 0
Best two Ewe Lambs, do 1 10
2d do George Miller, Markham 1 0
3d do do do 10

The show of the Cotswolds very good.

CLASS XIV, CHEVIOTS.

[8 Entries.]

JUDGES same as Cotswolds.

Best Ram, two shears and over, Wm. Roddick, Hamilton township 4 0
Best Shearling Ram do do 4 0
2d do do do 2 10
3d do do do 1 0
Best Ram Lamb do do 2 0
2d do do do 1 0
Best two Ewes, two shears and over, 4 0
Best two shearling Ewes, no Entry.
Best two Ewe Lambs, Wm. Roddick, Hamilton township 1 10

The Cheviots exhibited, all shown by Mr. Roddick, were considered by the Judges remarkably good.

CLASS XV. FAT SHEEP.

(17 Entries.)

JUDGES: P Armstrong, York; Thos Smith, do; Daniel Tye, Waterloo.

Best two fat Wethers, Christopher Walker, London £3 0
2d do do do 2 0
3d do Ralph Wade, Cobourg 1 0
Best two fat Ewes, John Snell, Chinguacousy 3 0
2d do Geo Miller, Markham 2 0
3d do John P Wheeler, Scarboro' 1 0

Extra entries in Sheep, [4 entries.] Benjamin Jennings, King, a splendid Southdown Ewe, worthy of a premium recommended £2.

PIGS.

CLASS XVI.—LARGE BREED PIGS.

[29 Entries.]

JUDGES: B C Shaw, Norfolk; J Woolnough, do; W E O'Brien, Simcoe.

Best Boar, 1 year and over, George McKinlay, Trafalgar 5 0
2d do Jas Young, Georgetown 3 0
3d do John Gibbs, Lindsay 2 0
Best breeding Sow, 1 year and over, J & J White, Trafalgar 3 0
2d do C A Jordison, Port Hope 2 0
3d do G McKinlay, Trafalgar 3 0
Best Boar of 1855, G McKinlay, Trafalgar 1 0
2d do J & J White do 2 0
3d do Geo Shaw, Darlington 1 0
Best Sow of 1855, C A Jordison, Port Hope 2 0
2d do do do 1 10
3d do George Shaw, Darlington 1 0

CLASS XVII—SMALL BREED PIGS.

[33 Entries.]

JUDGES: B C Shaw, Norfolk; J Woolnough, do; W O'Brien, Simcoe.

Best Boar, 1 year old and over,	Montreal County Agricultural Society	£5	0
2d do	P R Wright, Cobourg	3	0
3d do	John Duff, Kingston	2	0
Best Breeding Sow, 1 year and over,	P R Wright, Cobourg	3	0
2d do	do do	2	0
3d do	do do do	1	0

[The Judges recommended four young pigs with sow exhibited by James Davidson, Hamilton Township, as well worthy of a prize.]

Best Boar of 1855,	P R Wright, Cobourg	3	0
2d do	do do	2	0
3d do	Wm Eagleson, Hamilton	1	0
Best Sow, of 1855,	P R Wright, Cobourg	2	0
2d do	do do	1	10
3d do	do do	1	0

POULTRY.

CLASS XVII. [B] POULTRY.

[155 Entries.]

JUDGES: W B Crew, Toronto; E C Campbell, Niagara; W Hutt, Lincoln; G P Dickson, Vaughan.

Best pair of white Dorkings, 3 entries, none worthy			
Best pair of spangled do 7 entries, none worthy			
Best pair of black Poland, 4 entries, none worthy			
Best pair of goldan Polands,	P R Wight, Cobourg	1	0
2d do	do do	0	10
Best pair of Game Fowls,	Benj. Paulding, Hamilton	1	0
Best pair of Buff Cochin China, Shangbai, Canton, or Brahma, Pootra Fowls,	J Lambe, London	1	0
2d do	G S Burrill, Cramahe	0	10
[recommended]	Edwin Hawkin, Hope Township	0	10
Best pair of black do	Edwin Hawkin, Hope	1	0
2d do	do do	0	10
Best pair of White do	J Lambe, London	1	0
2d do	W Jeckell, Hamilton Township	1	10
Best pair of Hamburg Fowls,	Thomas Morrow, Cobourg	1	0
2d do	do do	0	10
Best pair of Dominique,	Edwin Hawkin, Hope	1	0
Best pair of Feathered Bantams,	W F H Kelly, Haldimand Tp	0	10
2d do	Jonathan Porter, Darlington	0	5
Best pair of Wild Turkeys, (a second prize,)	John Chapman, Hamilton Township	1	0
Best pair Turkeys [white or colored]	Ralph Wade, Junr, Cobourg	1	0
2d do	W F H Kelley, Haldimand Township	0	10
Best pair of Wild Turkeys, a second prize,	John Chapman, Hamilton Tp	0	10
Best pair of Large Geese,	Wm Jeckell, Hamilton Township	1	0
2d do	do do	0	10
Recommended	Ralph Wade, Junr, Cobourg	0	10
Best pair Muscovie Ducks,	Geo G Burrill, Cramahe	1	0
2d do	do do	0	10
Best pair Common Ducks,	J Newton, Cobourg	£1	0
Best pair Aylesbury Ducks,	P R Wright, Cobourg	0	10
Best pair of Poland Ducks,	J Lambe, London	0	10
2d do	do do	0	10
Best Lot of Poultry, in one pen, owned by the exhibitor [five entries, none worthy]			
Best Collection of Poultry entered in the various classes by one exhibitor,	Joseph Lambe, London	2	0

OTHER ENTRIES—

Rouen Ducks,	W Jeckell, Hamilton Township	0	10
Pair of Pea Fowls,	Ralph Wade, Jr, Cobourg	0	10
Rouen Ducks,	Wm Jeckell, Hamilton Township	0	5

The Judges beg to remark that they regret to find a meagre display of poultry compared with last year's exhibition in London. Generally speaking, the quality was very inferior, with the exception of the geese, all of which were excellent. They are also much surprised that parties evidently desirous of becoming breeders have not taken pains to ascertain the names correctly of the different breeds exhibited; one glaring instance occurred in the entry of ducks, some being entered as pure Aylesbury that were of the color of the Rouen; there were also several coops of fowls entered as of pure breed which were spurious. They further regret to notice that several coops of poultry could not be seen until Thursday morning, after the decisions were made, and the books made up most of which were superior to those on the ground in due time. They would further add that much inconvenience has arisen to the Judges from the want of the perfect arrangements which last year were found in London.

[Signed]

E C CAMPBELL, Niagara.
W B CREW, Toronto.
Geo P DICKSON, Elgin Mills.
W N HUTT, St Catharines.

[In addition to the above, the Secretary would observe, that a large proportion of the poultry entered in the books was not brought forward; in particular the extensive and varied collection entered by Dr. Case of Hamilton, none of which appeared on the ground.]

AGRICULTURAL PRODUCTS.

CLASS XVIII—GRAIN, SEEDS.

[223 Entries.]

JUDGES—H O'Reilly, Wentworth; H B Switzer, Halton; H Munroe, Durham; W Whitlaw, Wellington; D Anderson, Brant; W H Fox.

Canada Company's Prize of		£25	0
For the best 25 bushels of Fall Wheat, the produce of Canada West, being the growth of 1854. The prize awarded to the actual grower only of the wheat, which is given up to and becomes the property of the Association, for the distribution to the County Societies for seed,	W F Weese, Ameliasburg, Prince Edward County.		
2d do	by the Association, Thomas Tindale, Smith, Peterboro' County	10	0
3d do	Asa Ryder, Hope, Durham County	5	0

[The winners of 2d and 3d prizes retaining their wheat.]

Best two bushels of winter wheat, I H Anderson, West Flamboro' £2 10
2d do W F Weese, Ameliasburg 1 15
3d do T A Anderson, West Flamboro' 1 5

Best two bushels Spring Wheat, Walter Riddell, Hamilton Township 2 10
2d do Chr. Anderson, Haldimand Township 1 15
3d do James Carruthers, Haldimand Township 1 5

Best two bushels of Barley [2 rowed], James Pile, Whitby 1 10
2d do do do 1 0
3d do Jas Carruthers, Haldimand Tp 0 10

Best two bushels of Barley [6 rowed] J H Anderson, West Flamboro 1 10
2d do P R Wright, Cobourg, 1 0
3d do William Johnston, Hamilton Tp 0 10

Best two bushels Rye, J H Anderson West Flamboro' 1 10
2d do John Gilbert, Sydney 1 0

Best two bushels of Oats [white] Walter Riddell, Hamilton Tp 1 10
2d do Geo Roddick, Hamilton Tp 1 0
3d do do do 0 10

Best two bushels of Oats [black] John Fisher, Haldimand Tp 1 10
2d do J Boyce, Hope 1 0
3d do Matthew Eagleson, Hamilton Tp 0 10

Best two bushels of Field Peas, Joshua Sisley, Scarboro 1 10
2d do Christopher Anderson, Haldimand Tp 1 0
3d do J S Huffman, Sydney 0 19

Best two bushels of Marrowfat Peas, Rapalje & Co., Port Hope 1 10
2d do John Gilbert, Sydney 1 0
3d do George Shaw, Darlington 0 10

Best two bushels Tares, Walter Riddell, Hamilton Tp 1 10
2d do Ralph Wade, Junr, Cobourg 1 0

Best bushel white Field Beans, John Eagleson, Hamilton Tp 1 0
2d do Asa A Burnham, Cobourg 0 15
3d do P Hinman Haldimand tp 0 10

Best two bushels Indian Corn in the ear [white] Alexander Shaw, Toronto City 1 10
2d do Benjamin Jackson, Haldimand 1 0
3d do W F H Kelly, Haldimand 0 10

Best two bushels Indian Corn in the ear [yellow] Alexander Shaw, Toronto 1 10
2d do Jas Barnum Grafton 1 0
3d do William McMicking, Stamford 0 10

Best bushel of Timothy Seed, Robert Young, Ramsay, Lanark Co 2 0
2d do John Mulholland, Haldimand 1 10
3d do F W Stone, Guelph 1 0

Best bushel of Clover Seed, Samuel T Casey, Thurlow 2 0
2d do B G Shaw, Simcoe, Norfolk, 1 10
3d do P R Palmer, Thurlow 1 0

Best bushel Flax Seed, W H Allan, Hope 1 10
2d do F W Stone, Guelph 1 0
3d do do do 0 10

Best Swedish Turnip Seed, from transplanted bulbs, not less than 20 lbs, Wm Ball Hamilton township £1 10
2d do R C Gill, Haldimand 1 0
3d do George Roddick, Cobourg 0 10

Best 12 lbs field Carrot seed, Robert C Gill, Haldimand 1 10
2d do W H Allan, Hope 1 0
3d do David Fisher, Bowmanville 0 10

Best 12 lbs yellow Mangel Wurtzel seed, W H Allan, Hope 1 10

Best bale of Hops, not less than 112 lbs, P Fallon, Lachine, C E 5 0
2d do John Rison, Oshawa 3 0
3d do Dunning & Green, Sophiasburgh 2 0

CLASS XIX.—ROOTS AND OTHER FIELD CROPS.
[215 Entries]

JUDGES Same as Class XVIII with addition of Isaac Playter, Victoria.

Best bushel Pink-eye Potatoes, Aaron Choate, Hope 0 10
2d do W Lindsay, Hamilton township 0 10
3d do Henry Sawbell, Otonabee 0 5

Best bushel of any other sort, Stephen Taylor, Clarke 0 15
2d do Ralph Wade, Jr, Cobourg 0 10
3d do R A Goodenough, Toronto 0 5

Best bushel Swedish Turnips, F W Stone Guelph 0 15
2d do Ralph Wade, Jr, Cobourg 0 10
3d do John Underwood Hamilton t'p 0 5

Best bushel of white globe Turnips, Daniel McKyes, Cobourg 0 15
2d do John Iles, Puslinch 0 10
3d do do do 0 5

Best Bushel of Aberdeen yellow Turnips, F. W. Stone, Guelph 0 15
2d do do do 0 10
3d do Joseph Barnum, South Monaghan 0 5

Best 20 roots red Carrots, James Curtis, Hope 0 15
2d J. Boyce, Hope 0 15
3d do Walter Riddel, Hamilton, t'p 0 5

Best 20 roots white or Belgian Carrots, R. A. Goodenough, Toronto 0 15
2d do Alexander Alcorn, Hamilton Township 0 10
3d do Wm Richardson, Hamilton t'p 0 5

Best 12 roots Mangel Wurtzel [long red] C. S Male, Haldimand 0 15
2d do J Boyce, Hope 0 10
3d do Joshua Sisley, Scarboro' 0 5

Best 12 roots yellow globe Mangel Wurtzel, W Alcorn, Cobourg 0 15
2d do Baron de Longueuil, Kingston 0 10
3d do Alex Alcorn, Cobourg 0 5

Best 12 roots long yellow Mangel Wurtzel, Matthew Eagleson, Hamilton 0 15
2d do F W Stone, Guelph 0 10

Best 12 roots of Kbol Rabi, Alexander Shaw, Toronto city 0 10
2d do Walter Riddel, Hamilton township 0 5

Best 12 roots of Sugar Beet, R A Goodenough, Toronto city 0 15
2d do Joshua Sisly, Scarboro' 0 10
3d do John Duff, Kingston 0 5

Best 20 roots of Parsnips, Glover Bennett, Cobourg 0 15
2d do R A Goodenough, Toronto 0 10
3d do Edwin Hawkin, Hope 0 5
Best 20 roots of Chicory, Alexander Shaw, Toronto 0 10
Best 2 large Squashes, for cattle, Alexander Shaw, Toronto 0 15
2d do R A Goodenough, Toronto 0 10
3d do Theron Dickey, Clarke 0 5
Best 2 Mammoth field Pumpkins, R A Goodenough, Toronto 0 15
2d do Alexander Shaw, Toronto 0 10
3d do Stephen Taylor, Clarke 0 5
Best 4 common yellow field Pumpkins, Benjamin Jackson, Haldimand 0 15
2d do Wm Richardson, Hamilton 0 10
3d do Aaron Choate, Hope 0 5
Best 20 lbs Tobacco leaf, growth of Canada West [no entries]
Best Broom Corn Brush 28 lbs George Coventry, Cobourg 1 0

THE CANADA COMPANY'S PRIZE FOR FLAX.

Best 112 lbs of Flax [one entry but no report from Judges.]

THE CANADA COMPANY'S PRIZE FOR HEMP.

Best 112 lbs of Hemp [no entry]

EXTRA ENTRIES

Recommended for prizes. Six weeks or stubble Turnips W H Beresford, Whitchurch. 0 10 Green round turnip 0 10 And red round turnip, F. W Stone Guelph. 0 10 Twenty baskets variety late Potatoes, R A Goodenough, Toronto. £1 0 0

HORTICULTURAL PRODUCTS.

CLASS XX—FRUIT.

(126 Entries.)

JUDGES—Geo. Alexander, Oxford; R R Scott, Rochester; Thos. Hutt, Wentworth; J M W Icox, Jefferson Co. N Y

	s	d
Best 20 varieties of Apples, named [six of each] Geo. Leslie, Toronto	15	0
2d do Jas P Lovekin, Newcastle	10	0
3d do Wm Jeckell Port Hope	5	0
Best 12 Table Apples, named (Fall sort) J P Lovekin, Newcastle	10	0
2d do Geo Leslie, Toronto	7	6
3d do Alfred Harris, Rice Lake	5	0
Best 12 table Apples named, [Winter sort] John Creighton, Hamilton township	10	0
2d do E C Campbell, Niagara	7	6
3d do do	5	0
Best 12 baking Apples named J D Humphreys, Toronto	10	0
2d do Geo Leslie, Toronto	7	0
3d do E C Campbell, Niagara	5	0
[64 varieties of Apples, exhibited by Mr. Leslie, highly recommended]		
Best 20 varieties of Pears named (3 of each) Geo. Leslie, Toronto	15	0
Best 12 table Pears named (Fall sort) E C Campbell, Niagara	10	0
2d do do do	7	6
3d do Jas P. Lovekin, Newcastle	5	0
Best 12 table Pears named, Winter sort, Geo. Leslie, Toronto	10	0
Best dozen Dessert Plums named, Wm. Jeckell Cobourg	10	0
2d do Geo Brown, Hamilton City	7	6
3d do T Wilcox, Port Hope	5	0
Best 12 baking Plums named, E. C. Campbell, Niagara	10	0
Best quart of Damsons [English] E. C. Campbell, Niagara	10	0
Best 12 Quinces, Geo Leslie, Toronto	10	0
Best 4 clusters Black Hamburg Grapes [hot house] James Fleming, Toronto	10	0
Best 4 cluster Black Grapes grown in open air, E. C Campbell, Niagara	10	0
2d do B. F. Davy, Belleville	7	6
3d do J Hall, Peterboro,	5	0
Best 4 clusters White Grapes, grown in open air, John M Morden, Ameliasburgh	10	0
2d do J D Humphreys, Toronto	7	6
3d do G Vary, Niagara	5	0
Best collection of Grapes grown in open air, J D Humphreys, Toronto	5	0
Best Water Melon, E Hawkin, Hope	10	0
Best Musk Melon of any sort, J D Humphreys, Toronto	10	0
2d do do do	7	6
3d do do do	5	0
Best 12 Tomatoes, Baron de Longueuil, Kingston	10	0
2d do do do	7	6
3d do Edwin Hawkin, Hope	5	0
Best assorted collection of Tomatoes,, J D Humphreys, Toronto	15	0

Recommended for Prizes—Red and black currants. J D Humphreys, Toronto 10s Citron Melon, Wm Tubbs, Rice Lake; 7s. 6d., 55 varieties Pears, 56, varieties Apples, 12 varieties Grapes, monthly Raspberries, Ellwanger and Barry Rochester £3 15; Apples, quinces, peaches, W W Carson, Fort Wayne, Indiana, 7s. 6d; Black Hamburg Grapes, Mrs Proudfoot, Toronto, 7s. 6d.

CLASS XXI—GARDEN VEGETABLES.

(170 Entries.)

JUDGES—John Dewe, York, Geo Leslie, Toronto, J P Lovekin; Newcastle.

	s	d
Best 12 roots of Salsify, Baron de Longueuil, Kingston	10	0
2d do J D Humphreys, Toronto	7	6
3d do Joshua Sisley, Scarboro,	5	0
Best 4 heads Brocoli, John Duff. Kingston	10	0
Best 4 heads Cauliflower, Edwin Hawkin, Hope	10	0
2d do R A Goodenough, Toronto	7	6
3d do John Duff Kingston	5	0
Best 4 heads Summer Cabbage, John Duff, Kingston	10	0
2d do S A Goodenough, Toronto	7	6
3d do David Fisher, Bowmanville	5	0
Best 4 heads Winter Cabbage, R A Goodenough, Toronto	10	0
2d do Baron de Longueuil, Kingston	7	6
3d do David Fisher, Bowmanville	5	0
Best 4 sorts Winter Cabbage, including Savoys, J D Humphreys, Toronto	15	0
2d do B Losee, Cobourg	10	0
3d do Edwin Hawkin, Hope	5	0
Best 12 Carrots for Table, Baron de Longueuil, Kingston	10	0
2d do John Duff, Kingston	7	6
3d do Alfred Harris, Rice Lake	5	0
Best 12 Horn Carrots, R A Goodenough, Toronto	10	0
2d do John Duff Kingston	7	6
3d do B Losee, Cobourg	5	0

	s	d
Best 12 roots of White Celery, John Duff, Kingston	10	0
2d do Baron de Longueuil, Kingston	7	6
3d do George Coventry, Cobourg	5	0
Best 12 roots of Red Celery, Baron de Longueuil, Kingston	10	0
Best dozen Capsicums do do	10	0
2d do John Duff, Kingston	7	6
3d do George Coventry, Cobourg	5	0
Best collection Capsicums, J D Humphreys, Toronto	10	0
2d do A A Baker, Guelph	7	6
Best 6 purple Egg Plants, Baron de Longueuil, Kingston	10	0
2d do do do	7	6
Best 12 Blood Beets, do do	10	0
2d do Joshua Sisley, Scarboro,	7	
3d do R. A Goodenough, Toronto	5	0
Best peck of White Onions, Baron de Longueuil, Kingston	10	0
2d do J D Humphreys, Toronto	7	6
3d do Alfred Harris, Rice Lake	5	0
Best peck of Yellow Onions, Baron de Longueuil, Kingston	10	0
2d do John Spalding, Port Hope	7	6
3d do David Fisher, Bowmanville	5	0
Recommended, Sarah Potash, Rice Lake	5	0
Best peck of Red Onions, Baron de Longueuil, Kingston	10	0
2d do Thos Welden, Westminster	7	6
3d do do do	5	0
Best 12 Turnips (Table), T Hinman, Haldimand township	10	0
Best peck of early Potatoes for Seed, W Ball, Hamilton Township	10	0
2d do John Duff, Kingston	7	6
3d do E C Campbell, Niagara	5	0
Best and greatest variety of Early Potatoes, R A Goodenough, Toronto	15	0
2d do Capt Shaw, do	10	0
3d do David Fisher, Bowmanville	5	0
Best 4 Squashes [Table], E C Campbell, Niagara	10	0
Best and greatest variety of Vegetables (two entries, but no report)		
Extra Entries—Recommended for prizes: 12 Ochra Pods, Capt Shaw, Toronto;	10	0
Winter Radishes, W H Eyre, Hamilton township	7	6
George Coventry, Cobourg;	7	6
Cucumbers, John Payn, Hamilton township	5	0
Parsley, E Hawkin, Port Hope	5	0
Parsnips, Baron de Longueuil, Kingston	10	0
Red Cabbages, John Duff, Kingston	7	6
Joshua Sisley, Scarboro	5	0
Cucumbers, Savoys and Mushrooms, J D Humphreys, Toronto	1	0 0
Black and White Spanish Radish, John Duff, Kingston	5	0
Sweet Potatoes, W W Carson, Fort Wayne, Indiana	10	0

The Judges in Horticulture and the Vegetable Department, beg leave to remark, that the vegetables were all excellent of their kind, and, in their opinion, the best collection that they ever remember to have seen exhibited.

CLASS XXII—PLANTS AND FLOWERS.

[51 Entries]

Judges—George Alexander, Oxford, R R Scott, Rochester; J M Wilcox, Jefferson Co. N. Y; Thomas Hatt. Wentworth.

	£	s	d
Best dozen Dahlias, named, Wm Jeckell Port Hope	£0	10	0
2d do Geo Leslie, Toronto	0	7	6
3d do J D Humphreys, Toronto	0	5	0
Best and largest collection of Dahlias, Wm Jeckell Port Hope	1	0	0
2d do Geo Leslie, Toronto	0	10	0
3d do E C Campbell, Niagara	0	7	6
Best Bouquet of Cut Flowers, Sidney Smith, Hamilton township	0	10	0
2d do Geo Leslie, Toronto	0	7	6
3d do John Duff, Kingston	0	5	0
Best Bouquet for Table, George Leslie, Toronto	0	10	0
2d do James Fleming, Toronto	0	7	6
Best collection of Greenhouse Plants, not less than 12 specimens, William Jeckell, Port Hope	1	0	0
2d do J P Lovekin, Newcastle	0	15	0
Best and greatest variety of Greenhouse Plants, Wm Jeckell, Port Hope	1	0	0
2d do J P Lovekin, Newcastle	0	10	0
Best 6 Coxcombs, E C Campbell, Niagara	0	10	0
2d do do do	0	7	6
3d do do do	0	5	0
Best Collection of China Asters, George Leslie, Toronto	0	10	0
Best Collection of 10 Weeks Stocks, Geo Leslie, Toronto	0	10	0
2d do E C Campbell, Niagara	0	7	6
Best Floral Ornament or Design, Patrick Cooney, Peterboro.	1	0	0
2d do John Duff Kingston	0	15	0
Best Collection of Verbenas, not less than 12 varieties, J D Humphreys, Toronto,	0	15	0
2d do James Fleming, Toronto	0	10	0
3d do George Leslie, Toronto	0	5	0
Best collection of Native Plants, dried and named, Mrs C P Traill, Rice Lake	1	10	0
2d do do do	1	0	0
3d do F Cooney, Peterboro	0	10	0

Extra Entries—Recommended for prizes: Pansies Geo Coventry, Cobourg 7s 6d. Hydrangea and Cactus, Mrs Alborn, Cobourg 15s. 100 varieties Dahlias; 50 varieties Roses, 12 varieties Verbenas, 24 do varieties, 36 do Phloxes, and Cut Flowers, Elwanger & Barry, Rochester—all highly recommended. £3 15s., varieties of Potatoes, Peas, and Apples, from Rapalje of Rochester, second £1 00

CLASS XXIII—DAIRY PRODUCTS, SUGAR, PROVISIONS.

64 Entries

Judges—John Radcliffe, Welland; Andrew Ward, York; John Hitchins, Addington.

	£	s
Best firkin of Butter not less than 56 lbs, Andrew Waddell Hamilton tp	£2	10
2d do P R Palmer, Thurlow	1	10
3d do John Eadleson, Hamilton	1	0
Best Cheese, not less than 30 lbs. C H Vernon, Haldimand	2	10
2d do Thos Choate, Glanford	1	10
3d do S T Carey Thurlow	1	0
Best 2 Stilton Cheeses, not less than 14 lbs each. R Wade Jr Cobourg	2	10
2d do S T Carey, Thurlow	1	0
3d do R Wade Jr Cobourg	1	0
Best Butter, not less than 20 lbs in firkins, crocks or tubs. Samuel Scott, Clarke	1	10
2d do J Mulholland Haldimand	1	0
3d do Benj Way, Jr, Murray	0	10

Best 30 lbs Maple Sugar, P R Palmer £ 1 0
Best barrel of Flour, Jno Buck, Bowmanville 1 10
2d do do 1 0
Best Honey in the comb, not less than 10 lbs, David Fisher Bowmanville 0 15
2d do Wm Jeckell, Hamilton 0 10
3d do do do 0 5
Best jar of clear Honey do do 1 0
2d do do do 0 10
3d do P R Palmer, Thurlow 0 5

EXTRA ENTRIES.

Friend O Parn, Hillier, Essential Oils 10s. Robert Sinclair, Cobourg, Colouring Sauce 10s. A Orris Ogdensburg, N Y. 25 Boxes Cheese, highly recommended £1 10.

DOMESTIC MANUFACTURES.

CLASS XXIV—AGRICULTURAL IMPLEMENTS.

[144 Entries]

JUDGES—Capt C Purley Brant; J W Hough, Leeds; Samuel Mason, Halton; John Tilt Peel; and James Potter, Waterloo.

Best Wooden Plough, Isaac Modeland, Brampton £2 10
2d do Joseph Bingham, Norwich 1 10
3d do E & D M'Tavish, Bowmanville 1 0
Best Iron Plough, Edward M'Lernan, Trafalgar 2 10
2d do James Jeffrey, Petite Cote, Montreal 1 10
3d do G Ley, Scarboro' 1 0
Best Subsoil Plough, J B Marks, Kingston 2 10
Best pair of Harrows, Samuel Copeland, Clarke 1 10
2d do W Johnston, Hamilton Township 1 0
3d do Joseph West, Otonabee 0 10
Best Fanning Mill, W M'Kenzie, Morisburg 1 10
2d do Manville, Seton & Co, London 1 0
3d do Richard Lossing, Wilmot 0 10
Best Horse-power Thrasher and Separator, Haggert & Brothers Brampton 5 0
2d do H A Massey & Co, Newcastle 3 0
Best Grain Drill, Henry Adams, Hope, 3 0
2d do John Westlock, Hope, 2 0
Best Seed Drill or Barrow, Helm & Crossen, Cobourg 1 0
2d do Emanuel Rocky, Yarmouth 0 15
3d do Helm & Crossen, Cobourg 0 10
Best Straw-Cutter, Rapalje & Co, Port Hope 1 0
2d do J Brown, Toronto 0 15
Best Machine for cutting Roots for Stock, James Jeffrey, Petite Cote, Montreal 1 10
2d do T Shortt, Otonabee 1 0
Best Cider Mill and Press, Levi Howell, Ancaster 3 0
2d do H Scovell Waterford 2 0
Best Cheese Press, E & D M'Tavish, Bowmanville 2 0
Best two horse waggon, James Kay, Galt, 3 0
2d do Duncan M'Donald, Peterboro' 2 0
3d do Thomas Brown, Bowmanville 1 0
Best one horse light market waggon, S C Male, Haldimand 2 10
Best Horse Rake, W Niblock Brockville 1 0
2d do W Johnston, Hamilton 0 15
Best Metal Roller, John Helm, Port Hope 2 15
3d do H A Massey & Co., Newcastle 2 0
Best wooden Roller, R Brown, Hamilton £ 2 10
2d do P Hinman, Haldimand 1 5
Best Reaping Machine, Horatio Johnson, Toronto Township 5 0
2d do Haggert & Brothers, Brampton 3 0
3d do B F Smith, Hamilton 2 0
Best Mowing Machine, G N Oill, Saint Catherines 5 0
2d do John Helm, Port Hope 3 0
3d do H A Massey & Co., Newcastle 2 0
Best Farm Gate, John Barnard, South Monaghan 0 15
Best field or two-horse Cultivator, Andrew Bruce, Glenmorris 1 10
2d do Robert Brown, Haldimand Township 2 0
3d do Andrew Bruce, Glenmorris 1 0
Best horse hoe, or single horse Cultivator, James Jeffrey, Petite Cote Montreal 1 0
2d do Alex M'Kay, Cobourg 0 15
Best Post hole Borer, John Helm, Port Hope 3 0
2d do do do 2 0
Best wooden Pump Richard Thompson, Hope 1 0
2d do M Taylor, Haldimand Township 0 15
Best Machine for making Drain Tiles, J H Charnock, Hamilton city 2 10
2 l do James Bailey, Bowmanville 1 10
Best Brick making Machine, J Charnock, Hamilton city 2 10
Best half dozen Manure forks, T Drummond & Co Kingston 0 15
2d do do do 0 15
Best half dozen Scythe snaiths, T Drummond & Co. Kingston 0 15
Best ox yoke and bows, P Hinman, Haldimand 0 10
2d do do do 0 5
Best Grain Cradle, T Drummond & Co, Kingston 0 10
2d do do do 0 5
Best half dozen grain shovels, wood, T Drummond &. Co. Kingston 0 15
Best half dozen iron shovels, D F Jones, Gananoque 0 15
2d do Wm Parkyns, Cote St. Paul Montreal 0 10
Best half dozen spades, D F Jones, Gananoque 0 15

Extra entries, reccommended for prizes—A wood sawing machine, H A Massey & & Co, Newcastle, £1 10s; mower and reaper, H A Massey & Co. £1 15s; turnip slice [impo ted.] Benjamin Jennings, King, 15s; half dozen axe handles, Thos. Richards. Coldspring 5s; half dozen hoes, D F Jones, 5s; spade W Parkins, Montreal. 5s Model of a Stump Extractor, Andrew Jackson Cutchin, Trafalgar, 15s; Post boring and pole dressing machine, for making straight fences, John Ball, Hamilton Township £1; Helm & Crossen, Port Hope. vertical saw, 15s. [The Judges recommend that the Board of Directors devise some means of testing the utility of agricultural implements especially, mowers, reapers, and ploughs.]

CLASS XXV—LEATHER AND FURS.

[80 Entries]

JUDGES Capt Farringer; Dundas John Gilbert Hastings; Peter Graham, Frontenac.

Best saddle and bridle, W Thompson, Whitby £1 0
2d do John Wilton, Kingston 0 15
Best side saddle, do do 1 0
2d do Thos Morrow, Cobourg 0 15

Best specimen of whips and whip thongs [collection assorted] Thos Satterthwaite, Whitby £1 10
Best set of farm harness, Thomas Morrow, Cobourg 1 10
2d do do do 1 0
Best set of pleasure harness, J H Robinson, Chinguacousy 1 10
2d do Thos Morrow, Cobourg 1 0
3d do do do 0 10
Best travelling trunk, Thos Morrow, Cobourg 1 10
2d do John McVenn, Galt 0 15
Best side of sole leather, John Mather, jun, Port Hope 0 15
2d do do do 0 10
3d do do do 0 5
Best side of upper leather, John Mather, jun, Port Hope 0 15
2d do do do 0 10
3d do John McDonald, Baltimore 5 0
Best kip skin, do do 0 15
2d do John Mather, jun, Port Hope 0 10
3d do do do 5 0
Best skin Cordovan, John McDonald, Baltimore 0 15
Best side of harness leather, Baltimore 0 15
2d do Jacques & Armstrong, Cramahe 0 10
3d do John Mather, jun. Port Hope 0 5
Best calf skin, dressed, J Hall Peterboro' 0 15
2d do Jacob Snure, Jordan 0 10
3d do John Mcdonald Baltimore 0 5
Best skin of leather for carriage covers, J cob Snure, Jordan 1 0
Best Fur hat, H J Wrigley, Port Hope 0 15
2d do Alvah Secor, Cobourg, 0 10
Best fur cap, do do 0 15
Best fur sleigh robe, do 0 15
2d do Theron Dickey, Clarke 0 10
Best specimen of bootmakers' work, Alex Gemmell, Toronto 0 15
2d do do do 0 10
3d do P R Palmer, Thurlow 0 5

Extra entries recommended for prizes—Mufflers, and gauntlets, ladies' furs, and silk hats, Alvah Secor, Cobourg, 1 10s; Dress suit of fine clothing, Frazer & Cobourg 10s; Morocco calf skins, colored sheep skins, Wm Craig, Port Hope £1 5s; Colored sheep skins, H Willkinson, Brantford 15s;

CLASS XXVI MANUFACTURES IN METALS, &c.

(61 Entries.)

JUDGES—James McSherry, Lincoln; W N Taitney Renfrew; Moses Barrowman, Welland.

Best portable steam Engine for farming purporses, (no entry)
Best model in metal of Engine, general Millwright's work or Machinery, H A Massey & Co Newcastle, diploma and 2 0
Best Pumpmakers' work, George Righam, Toronto. (Galvanized Iron Tube Chain Pump) diploma and 1 0
2d do Jacob Barnes Trafalger, 1 10
Best Iron Proof Safe, J J Taylor, Toronto, diploma and 1 10
Best Refrigerator, D Raymer, Galt, diplom and 1 0
Best System of ventilating buildings, Sheriff Ruttan, Cobourg, diploma and 5 0
Best Balance Scales J Wilson, Toronto, 1 0
2d do Smart & Ross, Brockville 0 15
3d Balance Scales, Noyes & Matthews, Hamilton 0 5
Best pair of Hames, C S Male, Haldimand Township 0 10
Best Augers from one-half to two inches, P J Ayers, Peterboro' 0 10
2d do do do 0 5
Best 20 pounds Cut Nails, Walker and Berry, Kingston 0 10
2d do R Judson & Co, Hamilton 0 5
Best half dozen narrow Axes, R Holt & Co, Dundas, 0 15
2d do P J Ayres, Peterboro' 0 10
Best set of Horse Shoes, James Hobbs, Toronto city 0 15
2d do do do 1 10
3d do John Newton Cobourg 0 5
Best assortment Edge Tools, R Holt & Co, Dundas diploma and 5 0

EXTRA ENTRIES IN MANUFACTURES IN METALS &c.—First prizes.—Two Baths, George Harding, Toronto city, £2 10s; Wash Hand Basin George Harding Toronto 10s; Platform Scales, 2000 lbs, Noyes & Mathews, Hamilton city, £1; Iron Bedstead, J &J Taylor, Toronto 15s; two Bank Locks J & J Taylor, Toronto, 10s; Machine for making carriage spokes, Charles Petch, Newcastle, £2: Cock, R S, Libbey, Port Hope, 10s; Two-bill Pick, James Hobbs, Toronto, 10s; Fishing tackle, E Abrahams, Kingston, 10s; J Flint city of Hamilton, case of saws, £2 10.

Second prizes.—Cistern and Stove, George Harding, Toronto, 15s; Platform Counter from 100 to 200 lbs, Noyes & Matthews, Hamilton, 10s; Iron Bedstead, J & J Taylor, Toronto 10s;

Third Prizes,—Platform Scales, 800 lbs, Noyes & Mathews, Hamilton, 5s; Iron Bedstead, J & J Taylor, Toronto, 5s

CLASS XXVII—CABINETWARE, CARRIAGES, &c.

(103 Entries.)

JUDGES—D B Stevenson, Prince Edward; C B Hewitt, York; Gilbert Moore, Oxford.

Best Sideboard, Joseph Stich, Palermo, diploma and £3 0
2d do W F Russell, Hope 2 0
3d do J Sailsbury, Cobourg 1 0
Best Piano (Canadian Manufacture), Wm Matthews, Hamilton 5 0
2d do Siebold, Manby & Co, Montreal 3 0
Best Specimen of Graining Wood, W Edwards, Woodstock diploma and 1 10
Best Centre Table, Joseph Stich, Palermo, diploma and 1 0
2d do W F Russell, Port Hope 0 15
Best Dining Table, W F Russell, Port Hope, (3d Prize), 0 10
Best Easy Arm Chair, George Stephens, Cobourg 0 15
2d do T Fuller & Co, Oshawa 0 10
3d do W F Russell, Port Hope 0 5
Best Sofa, Geo Stephens, Cobourg, diploma and 3 0
2d do W F Russell, Port Hope 1 10
3d do T Fuller & Co. Oshawa 1 0
Best 6 Dining Room Chairs, W F Russell & Co Port Hope 1 10
2d do G Stephens, Cobourg 1 0
3d do T Fuller & Co Oshawa 0 15
Best Ottoman, no first prize given.
2d do G Stephens, Cobourg 0 15
3d do W F Russell, P Hope 0 10

Best Work Box, G Stephens, Cobourg 0 10
2d do T Fuller & Co, Oshawa 0 5
Best 1 Horse Pleasure Carriage, Thomas Todd & Co., Galt, diploma and 2 0
2d do Holmes & Abbey, Toronto 1 10
3d do W & J McBride, London 0 15
Owen & Wood, Toronto Extra Prize 0 15
Best 2 Horse Pleasure Carriage, Wiliams & Cooper, Hamilton, diploma and 2 0
2d do J P Prouguey, Hamilton 1 10
3d do Owen & Wood, Toronto 1 0
Best Wooden Pail, Aaron Dame, Belleville 0 10
2d do do do. 0 5
Best Washing Machine, Alex Anderson, Markham 0 10
2d do Daily Salock, Prescott 0 5
Best Churn, two entries, neither worthy of a prize
Best 4 or 6 Panelled Door, McLeod & Co, Port Hope 0 15
Best Window Sash, 12 lights, hung in frame, McLeod & Co., Port Hope 0 15
Best Bundle Shingles, split, Asa A Burnham, Cobourg 0 10
2d do do do. 0 5

Extra Entries——Recommended for prizes: Quartette Table, marble top, and Marble Daguerreotype Stand, Sylvester Lewis, Cobourg, 10s; Drawing Room Chair and Bridal Set of Furniture, Thos Fuller & Co., Oshawa, 10s; Card Table and Side Table, George Stephens, Cobourg £1 10s; French Bedstead, Book Case, and Side Table. W F Russell, Port Hope, £2 15s; Secretary and Book Case, Jos ti ch Palermo, £1 5s; French Bedstead. Edward Hurley, Peterboro' 5s; J B Hayden, Brantford, carriage Wheel 10s; A B Hall, Newcastle, Six Octave Melodeon, 15s; Geo W Clark, Rochester, N Y State, Double Reed Melodeon £1 5s; D Gibbons, Rochester, Four Pianos, recommended, a diploma for a new improvement in construction, and prize of £5

POTTERY.

CLASS XXVIII—POTTERY.

(29 Entries.)

Judges—E W Thomson Toronto; Sheriff Ruttan, Cobourg; and Jno Dewe, York Township.

Best specimen of Pottery, J Brown, Bowmanville £ 1 0
2d do J Davis, York tp 0 10
3d do do do 0 10
Best specimen Drain tiles and Pipes, John Brown, Bowmanville 2 10
2d do J Bailey, Bowmanville 1 0
3d do J cLaren, Quebec 0 15
Best Dozen Bricks, J Sisley, Scarboro' 0 10
2d do J B ruard, S Monaghan 0 5
Best assortment of Pottery, John Brown, Bowmanville 1 10
2d do J Davis, York tp 1 0
3d do J Bailey, Bowmanville 0 10

EXTRA ENTRIES IN POTTERY.

First prizes—Chimney Pipe, John Davis, York tp 10s. Paving Bricks, J C Bramley, Agent, Toronto, 10s.

Second Prize—Front Brick, J C Bramley, Toronto, 15s.

CLASS XXIX—WOOLLEN AND FLAX GOODS.

[88 Entries.]

Judges—Jas Young, Halton; George Ross, Renfrew; Geo Welbanks, Prince Edward.

Best piece of not less than 12 yards of woollen carpet, Mrs. Mary Boyce, Hope township 2 0
2d do P R Palmer, Thurlow 1 0
Best pair Woollen Blankets, Mrs, Mary Boyce Hope tp 2 0
2d do N W Leverich, Port Hope 1 0
3d do Mrs Mary, Boyce, Hope tp 0 10
Best Counterpane, W V Disher, St Catherines 1 0
2d do Mrs Mary Boyce, Hope tp 0 15
do do W A Fox, Murray 0 10
Best 12 yards Flannel, G P Mathewson, Whitby 1 0
2d do Gilbert Jones, Murray 0 15
3d do Wm M gaby Hamilton tp 0 10
Best piece Satinett, 12 yards, very fine, W V Disher, St. Catherines 1 0
2d do G P Mathewson, Whitby 0 15
3d P R Palmer, Thurlow 0 10
Best piece of Broadcloth, from Canadian wool, 1 Entry, not found; two pieces narrow doeskin entered under this head, of very superior quality, W. V. Disher St. Catherines 2 0
Best piece Flannel, 10 yards, not Factory made, Julius Richardson, Haldimand 0 15
2d do Gilbert Jones, Murray 0 10
3d do Mrs M Boyce Hope tp 0 5
Best 12 yards Winter Tweed, A Richardson, Haldimand tp, 3d Prize 0 10
Best 10 yards fulled Cloth not factory made John Mulholland, Haldimand tp 1 10
2d do J Fraser Pickering 1 0
3d do do do 0 10
Best Shawls not factory made, Mrs Mary Boyce, Hope tp 1 10
2d do do do do 1 0
3d do do do do 0 10
Best piece Linen Goods, Mrs Mark Burnham Port Hope 0 15
2d do Hannah Shaw, Cobourg 0 10
3d do do do 0 5
Best 28 lbs flax or hemp Cordage, Thomas Carson, Cobourg 0 15
Best 12 Linen Bags, Manufactured from flax, growth of Canada, David Smiley, Vaughan 1 0
Best half-dozen pairs knitted factory Woollen Drawers, James Thompson, Ancaster 1 0
Best half dozen knitted factory Woollen shirts, James Thompson, Ancaster 1 0

Extra Entries in Woollen and Flax Goods.

1st—Two Coverlids, Mrs Mary Bryce, Hope township £1 0. 0d—A Rag Carpet N W Leverich, Port Hope 10s. 0d—Pair Horse Blankets, A H Bradley, Haldimand Township, 10s.

CLASS XXX—LADIES' DEPARTMENT.

[259 Entries.]

Judges: Mrs Kirkhoffer, Mrs Burnham, Mrs Wallace

Best specimen in Crotchet Work, Miss H Bidwell, Cramahe 1 0 0
2d do Miss Anne J Grier, South Monaghan 0 15 0
3d do Margaret Bell, Carleton Place 0 10 0
Best Specimen of Guipure Work, Miss Tisdale, St Catherines 1 0 0

Best specimen of Lace Work, Mrs Mark Burnham, Port Hope 1 0 0
2d do Miss H Bidwell Cramahe 0 15 0
3d do Miss Carpenter, Cobourg 0 10 0
Best specimen of Fancy Knitting, Mrs Armour, Cobourg 0 15 0
2d do Mrs Unwin, Toronto 0 10 0
Best specimen of fancy Netting, Mrs Barry, Niagara 0 15 0
Best Embroidery, in Muslin, Miss Birrell, Pickering 0 15 0
2d do Miss Leeming, Maitland 0 10 0
3d do Mrs Burnham, Port Hope 0 7 6
Best Embroidery, in Silk, Mrs J McLeod, Cobourg 0 15 0
Best Embroidery, in Worsted, Miss Heath, Cobourg 0 15 0
2d do Mrs Armour, Cobourg 0 10 0
3d do Miss Harvey, do 0 7 6

Recommended, Miss S Dority, Niagara ; Mr. S. J Brown, Bowmanville.

Best specimen of Worsted Work, Miss N. Bennett, Colborne 0 15 0
2d do Miss Scott, Cobourg 0 10 0
3d do Miss Standwich do 0 7 6
Best specimen of raised Worsted Work, Mrs. Armour, Cobourg 0 15 0
2d do Eliza Thorn, Darlington 0 10 0
3d do Miss Sarah Field, Cobourg 0 7 6
Best specimen of Ornamental Needle Work, no award
Best specimen of Quilts, in Crochet, Miss M. Choate, Hope 1 0 0
2d do J. Davidson, Hamilton township 0 15 0
Do in Knitting, Miss Anne Geale, Port Hope 1 0 0
2d do Miss Julia Bethune, Cobourg 0 15 0
3d do Mrs. Armour, Cobourg 0 10 0
Do in Silk no award
Best Piece Work Quilt, Miss M. E. Coates Oakville 1 0 0
2d do Mrs. Benson, Hamilton 0 15 0
3d do Sarah Geale, Port Hope 0 10 0
Best specimen of Tatting [no award]
Best specimen of Braiding [no first]
2nd do Mrs. A. R Christie, Niagara 0 10 0
Best specimen of Wax Fruit, M. W. Loverich, Port Hope, 0 15 0
Best Pair Woollen Socks, Miss M. Bidwell Cramahe 0 10 0
2nd do Mrs. Ruth Bradley, Haldimand 0 7 6
3d do P. R. Hinman, Haldimand 0 5 0
Best Pair Woollen Stockings, Mrs. Thomas Choate, Glanford, Wentworth 0 10 0
2d do Miss Mary Boyce, Hope, 0 7 6
3d do Mrs. Monson, Cobourg 0 5 0
Best specimen of Gentlemen's Shirts, Mrs. Fee, Bowmanville, 0 15 0
2d do do do do 0 10 0
3d do Miss Mitchell, Clarke 0 5 0
Best pair Woollen Mittens, P. Hinman, Haldimand 0 10 0
2d do do do do 0 7 0
3d do Mrs P. R. Palmer, Thurlow 0 5 0
Best Hat of Canadian Straw [no first prize]
2d do Miss M. Bidwell Gramahe 0 7 6
3d do Mrs. McBrien, Haldimand 0 5 0

Other articles recommended; Mrs. M A Street Cobourg landscape formed of moss and bark 15s Chris. Schleffel, Humberstone, fancy basket, 5s ; Mrs. Eliza Ormsby, Richmond, Carleton Co, ladys' boa and cuffs 10s; Miss Tisdale, St Gatharines leather work brackets 15s; do three potichomanie vases, 15s; Miss A B ackstock, Cavan, wreath of flowers, 10s; Ellen Calvert, Cavan, stitched overcoat, 15s ; Miss Butler leatherwork cornice, 10s ; Miss Thompson, knitting, 10s; Mrs W Weller, Cobourg, fancy table cover, 10s; Mrs A Burnham, Cobourg, moss basket, 7s 6d; Mrs. H. A Massy, Newcastle, pair moccasins, 5s.

FINE ARTS.

CLASS XXXI—FINE ARTS, &c.

(200 Entries.)

[Executed since last Exhibition.]

JUDGES—Dr. Barker, Frontenac ; G A Barber, Toronto ; Ebenezer Birrell, Ontario ; J D Humphreys, Toronto

Oil—PROFESSIONAL LIST.

Historical painting, Canadian subject, [no entry]
Landscape, Canadian subject, no award
Animals [grouped or single] T Bissett, Peterboro', diploma and 3 0 0
Portrait Mr. Sawyer, Cobourg, diploma and 2 10 0
2d best do do do 1 10 0
Recommended, T. Bissett, Peterboro' 1 10 0

In water Colors.

Landscape, Canadian subject, [no prizes awarded, as none of the articles exhibited were of that quality which professional paintings ought to possess.]
Portrait, H Meyer, Toronto, diploma and 2 0 0
2d best do do do 1 0 0
Animals [grouped or single] no entry,
Flowers, B. Whitefield, Toronto 1 0 0

Pencil and Crayon.

Pencil Portrait, F. W. Lock, Brockville Diploma and 1 10 0
Crayon Portrait, do do diploma and 1 10 0
2d best do do do 1 0 0
Pencil Drawing, E Whitefield, Toronto, diploma and 1 10 0
2d best do do do 1 0 0

NOTE BY JUDGES.—Although Prizes were awarded in this section, the articles exhibited were not considered meritorious, nor were they strictly speaking pencil drawings, and hardly eligible for prizes.

Crayon Drawing, [no first]
2d do F W Lock, Brockville, 1 0
Colored Crayon, diploma and 1 1 0
2d best do do do 1 0

Oil—AMATEUR LIST.

Landscape, Canadian subject, Capt Taylor, Cobourg, Diploma and 2 10
2d best do, do, 1 10
Animals (grouped or single) F C Bradley, Cobourg Diploma and 2 10
2d best, Miss I C Jones, Brockville 1 10
Portrait Miss Ida C Jones, Brockville, Diploma and 2 0

In Water Colours.

Landscape Canadian Subject, Miss Eccles, Toronto, diploma and 2 0
2d best, Captain Taylor, Cobourg 1 0
Animals (grouped or single) H C Taylor, Cobourg Diploma and 2 0
2d best, H C Taylor, Cobourg, 1 0
Miniature, Miss Martha Thompson, Toronto, Diploma and 1 10

Flowers, J D Humphreys, for E. C. F., Toronto	1	0
2d best, Miss Martha Thompson, Toronto	0	15

Pencil and Crayon.

Pencil Portrait, no award.		
Crayon Portrait, Miss Martha Thompson, Toronto Diploma and	1	0
Pencil Drawings Miss Tisdale, St. Catharines Diploma and	1	0
2nd best Geo Coventry, Cobourg	0	15
Crayon drawing, Miss M Davis, Toronto, Diploma and	1	0
2nd best, Miss Stephens, Cobourg	0	15
Coloured Crayon, Miss Imogene Jones, Brockville, Diploma and	1	0
2nd best, Miss Ida C Jones, Brockville,	0	15
Best specimen of Colored Geometrical drawing of Engine or Millwright work, Wm Hodgins, Hamilton City Diploma and	2	0
Best specimen Architectural Drawing, W Hodgins, Hamilton	1	10
Daguereotype, Best collection, the exhibitor to have operated in Canada for the last 12 months, Mrs J Thompson, Hamilton. Diploma and	1	10
Lithographic Drawing, E Whitefield, Toronto	1	10
Wood Engraving, Thomas Wheeler, Toronto, diploma and	1	10
Engraving on Copper, Thomas Wheeler, Toronto, diploma and	1	10
Engraving on Steel, Thomas Wheeler, Toronto diploma and	1	10
Best Specimen of Seal Engraving, Thomas Wheeler, Toronto	2	0
Do do Carving in Wood, 4 entries, none worthy.		
Do do Carving on Stone, C S Powers, Newcastle, diploma and	2	0
Do do Ornamental turning, Thos Harper, Cobourg	1	0
Stuffed Birds, H Lump, Rochester	1	0
2d do John Grieve, Cobourg	0	10
Picture Frame, gilt, A Smith, Toronto	1	0
2d do Stephen Wright, Kingston	0	10
Picture Frame, veneered, W F Russell, Port Hope	1	0
2d do Joseph Stich, Palermo	0	10
Stained Glass, John Spence, Montreal	1	0
Dentistry, Miles B Stennett, Hamilton, diploma and	1	0
2d do do do do	0	10

EXTRA ENTRIES, FINE ARTS, &c.

Recommended for Prizes—Wolfendon and Farquharson. 2 marble chimney pieces and 2 marble monments, £3 10s. John Roberts, Cobourg, minerals, home and foreign, £1. Alfred Hayward, Hamilton Township, ornamental pedestals 15s Robert Brown & Co. Madoc. marble slabs (highly commended. £1 10s. Thos Harper, Cobourg, fancy fire screen, 10s E Whitefield, Toronto, colored lithographs of Kingston, Ottawa, and London £1 10s. Miss Tisdale. St Catherines, water color drawing of Clifton and River Avon £1 10s Thomas Wheeler. Toronto, die sinking, and bookbinders' tools £1. Miss Jane Russell, Haldimand, Scotch stone House, 10s Samuel H Haycock, Port Hope, models of Port Hope Light House, and of railroad tressel bridge, £1 10s Miss. Piper. Toronto, anatomical painting in water colors, 15s. H Meyer, Toronto, lighographed drawing on stone, £1 ; do, engravings on copper ; 15s, do ; photographs colored 10s ; do. do. in India ink, 10s ; P F Ware, Hamilton, electro plates £1.

NOTE BY JUDGES—Amongst those marked highly recommended, the judges single out No 1, Hamilton Water Works. by Mr. Hodgins, and 31 32, photographs, by Mr. Meyer as especially worthy of honorable mention for prizes. The judges also recommend to particular notice the specimens of lithographing on Canadian stone (portrait) also by Mr. Meyer ; also the collection of electro plate by Mr. Ware of Hamilton As regards the specimens of Canadian birds in water colors [Amateur, Capt Taylor, Cobourg] of Flowers (Amateur,) sec 9 and Water Color Landscape, [Miss Tisdale. St. Catherines,] the Judges cannot too highly commend the same as superior in artistic skill and taste to anything of the same class exhibited as Professional. The judges regret that no specimen of Historical painting, Canadian subject, was exhibited. and they notice with regret the absence of Paul Kane's artistic pencil. As regards Amateur paintings and drawings generally, excepting the above specified, the judges awarded prizes more to encourage a taste for the art than because they consider the specimens shown as really deserving prizes for their merits. In future it is hoped more accuracy in drawing, and more regard to the rules of Art will be observed by Amateurs.

CLASS XXXII.—INDIAN PRIZES

(79 Entries.)

JUDGES : Same as in Fine Arts.

Best Bark Canoe Polly Noggin, Rice Lake,	0	10
Best pair Moccasins (worked with beads) Mitchell, St Regis	0	7
2d do Mary,	0	5
Best Hand Basket, Mrs Faunchie, Rice Lake	0	7
2d do do do	0	5
Best 14 lbs Wild Rice, Elizabeth Waboose do	0	10

The Judges recommend that sums from 2s. 6d. to 7s. 6d should be awarded to the exhibitors of a large quantity of Miscellaneous Indian work. The whole amount so awarded being about £10.

CLASS XXXIII.—BOOKBINDING, PAPER, &C.

[10 Entries.]

JUDGES : Dr Barker, Frontenac ; G. A. Barber, York ; Eben. Birrell, Ontario ; J. D. Humphreys, York

Best specimen Bookbinding Simon Harrison, Cobourg,	1	0
2d do do do	0	15
3d do B. Losee do	0	10

[The latter protested against as not being executed by the exhibitor]

Best specimen Letter Press Printing, executed since last exhibition, John Blackburn, Toronto,	2	10
2d do do do	1	10
3d do Clench & Floyd, Cobourg,	1	0

Extra Entries,

Maclear & Co.'s collection of lithographic printing was recommended by the judges for special prize £1 10s.

CLASS XXXIV.—FOREIGN STOCK.

[12 Entries]

JUDGES :—Same as for Durham Cattle, Agricultural Horses, and Southdowns.

Best Durham Bull, Stephen Powell, Lewiston, New York, Diploma and 2 10
Best Durham Cow, do do Diploma and 1 10
Best Stallion for Agricultural purposes, S. Powell, Lewiston N. Y. Diploma and 3 0
2nd do do do 3 0

[NOTE,—Grand Exhibition, Mr Powell's Horse, considered by the Judges the best Coach horse exhibited, and they would recommend him to breeders of Horses]

Best Blood Stallion, O Howland, N Y Diploma and 3 0
Best Southdown Ram, Cornelius Parsons, Riga, N Y 1 10
2d do do 1 10
Best three-year old Blood Mare, exhibited by O Howland, Auburn, N Y, recommended for 2 10

CLASS XXXV.—FOREIGN AGRICULTURAL IMPLEMENTS.

[72 Entries.]

JUDGES:—D Christie, Brant; Baron de Longueuil, Frontenac; W Byres, Carleton.

Best Plough, J Rapalje & Co, Rochester Diploma, and 1 0
Best Subsoil Plough do do diploma and 1 0

NOTE BY JUDGES.—Williams', Michigan, Double or Subsoil Plough, Nos 4. and 5. The Judges wish especially to call public attention to these ploughs, as they are fully impressed with the conviction that they are a great boon to the agricultural community. In the opinion of the Judges they are better fitted than any other plough now in use to eradicate weeds, couch grass, &c. They are also important as labor saving implements in the culture of wheat.

Best Pair Harrows do do 1 0
Best Fanning Mills, A B Childs, do Diploma and 1 0
Best horse power Thrasher and Separator, J Rapalje & Co, Diploma and 2 10
" Seed Drill or Barrow, do Diploma and 1 0

The Judges awarded prizes equally to O Patchin, Albion, N Y; Smith, Tracy & Co, Newark, N Y; Rapalje & Co, Rochester, each 1 0
Best Straw cutter, J Rapalje & Co 1 0
" Portable Grist Mill, do do Diploma and 2 10
" Grain Cracker, do do 1 10
" Machine for cutting Roots for Stock, do do 1 0
" Corn and cob Crusher, do do 1 0
" Clover Machine, do do Diploma and 2 0
" Reaping Machine do do Diploma and 2 10
2d do do C Patchin, Albion, N Y 1 5
Best Cultivator, Smith, Tracy & Co, Newark, Diploma and 1 5
2d do J Rapalje & Co, 0 15
Best assortment of Agricultural Implements and Edge Tools, Rapalje & Co Diploma and 5 0
Smith, Tracy & Co, Recommended 2nd

EXTRA ENTRIES.—The following Implements &c., in the foreign Class were recommended by the Judges for Prizes:—

Rapalje & Co., Rochester. N. Y.; Cider Mill. Dog Power for churning &c, Farmers Furnace; Wheat Drill; Broad Cast Sower; Garden Engine; Field Roller; Butterfly Harrow; Square do.; Garden Barrow; Corn Sheller; Ox Yoke; 1 doz doubl Steel Axes; One do Single do; 1 do Potato Hooks; ½ doz pr. Malleable ox bow pins; Gauge Plough; Iron Plough; Side Hill do; Sword Plough; Double Mould board do.. 4 Sizes; Paring or Ridging Plough; Horse Hoe; Corn Stalk Cutter, hand Power; do horse power; Six different kinds and sizes Hay Cutters; Thermometer Churns, Six Sizes; Sausage Meat Cutter. 2 Sizes; Fruit tree Scrapers; Pruning Saws & Chisels; grafting do do; Scion or twig Cutters; Garden Syringes; Strawberry forks; Vine Scissors; Cast Steel Spades; do Shovels, do hoes; One Horse Cultivator; Clod Crusher.—Maas, Percival & Maas, Philadelphia, Seal Press. Geo. H Bostwick, Rochester, Model of a Bran Duster. Geo L. Lundy, Rochester. Platform Scale. Mrs. Henry Lump, Rochester, Hair Bracelets.

NOTES BY JUDGES.—The Judges recommend for a premium a very ingenious and useful model of a fanning mill or grain cleaner for mill purposes, exhibited by G H. Bostwick of Rochester. Williams' Clod Crusher, shown by Rapalje & Co, and the first ever exhibited in Canada, a very useful Implement on hard clay soils.

The Judges strongly recommend the Messrs. Rapalje & Co. to the Board of Agriculture for the spirit and enterprize which they have shown on every occasion in exhibiting useful and labor saving Machines and Implements, and suggest a pecuniary as well as complimentary notice, the Messrs. R. having been put to great expense in bringing their Implements to the Provincial Agricultural Exhibition for several years past.

PRIZE COUNTY REPORTS.—The three Counties selected this year to compete for Prizes for County Agricultural Reports were, Simcoe, Bruce and Prescott. The prizes were awarded as follows:—For the best Agricultural Report for the County of Simcoe for the year 1855, Mr Lynch, of Brampton, Peel, £15. For the next best do do do Mr. Wm E. O'Brien, Barrie, Simcoe Discretionary Prize, £5. For the best Report on the County of Bruce, Mr. John Lynch Brampton, £15.

No Report from Prescott.

TIMOTHY.—Have you not, Messrs. Editors, inquired oftener than you can tell, the origin of the name of the grass called Timothy? I have Have you not yet oftener heard the question asked without any answer being given? I found the following in a little beautiful, interesting and useful book entitled The Green Fields and their Grasses, by Anne Pratt, London:—

"There are several species, two of the cats-tail grass. One only is very common, but that one is to be found in every meadow. It is the common cats-tail of Timothy grass, (*Phleum pratense.*) This latter name it received from Timothy Hanson, who introduced it from New York and Carolina, about the year 1780" A SUBSCRIBER.

To feed an ox to one thousand two hundred pounds weight, usually takes five years; while the same weight of poultry can be made ready for the table in about three months, and at less than half the cost in food. So says an English poulterer.

HOLDING UP THE MILK.—Mr. Editor—Will you, or some of your able correspondents, through the medium of your valuable paper, inform a young farmer of the best method of treating a cow which has acquired the habit of holding up her milk! I have tried everything that I can think of, yet it does no

good whatever. She is an extra cow in all other respects, so I do not like to turn her for beef. By answering the above inquiry you will greatly oblige.

REMARKS.—Feed well, so as to cause an abundant flow of milk, then treat her kindly, and while milking allow her to eat a little meal and water, or handful of fresh grass, or some fresh morsel, and she will soon get into the habit of "giving down" freely.—*N. E. Farmer.*

THE MONTHS—NOVEMBER.

"Next was November; he full grown and fat
As fed with lard, and that right well might seeme;
For he had been a-fatting hogs of late,
That yet his browes with sweat did reek and steam;
And yet the season was full sharp and bream;
In planting eeke he took no small delight;
Whereon he rode, not easie was to deeme,
For it a dreadful centaure was in sight,
The seed of Saturn and fair Nais, Chiron hight."

—SPENSER.

This month, like the two preceding ones, derives its name, without alteration, from the Latin, signifying the ninth month of the year, reckoning from March. Our Saxon ancestors called it the *Wintmonath, or Wind-month,* in consequence of high winds usually prevailing at this season. It was also designated *Blot-monath,* that is *Blood-month,* from the Saxon word *blotan,* to slay, because the cattle which they now killed in abundance for winter store were dedicated to their gods. The same practices continued after the introduction of Christianity; the gloomy prospects of approaching winter, and the general dreariness of nature at this season, were alleviated to our ancestors by the busy preparations for Christmas feastings. The allegorical representations of this month consist of a man in a changeable suit of green and black, with a crown of evergreens, and a bunch of culinary roots in his hand; and the sign of Sagittarius on the left side of the picture, into which the sun enters on the 22nd instant.

Although to most northern latitudes approaching our parallel, the proverbially styled "gloomy November," more or less applies, yet there is a striking difference between the character of the month in the British Islands and Canada. Here we usually experience no small share of clear and pleasant weather in November, attended by smart frosts during the night; drenching rains, with high winds and snow storms, also intervene. That most remarkable and lovely season, always more or less marked, called the "Indian Summer," relieves this month of much of its usual dreariness in this country. In the British Islands, however, November is universally allowed to be the most gloomy month of the year; but even there exceptions have frequently to be made for particular seasons and places. In dry and moderately elevated districts, apart from rivers and dense cities, the weather and scenery are often the very contrary of gloomy and dispiriting. Many days may be experienced in the country as attractive as the one so graphically described by that correct observer of nature, Miss Mitford. Writing November 6th, that charming author remarks:—"The weather is as peaceful to-day, as calm, and as mild, as in early April; and perhaps an autumn afternoon and a spring morning do resemble each other more in feeling, and even in appearance, than any two periods of the year. There is in both the same freshness and dewiness of the herbage; the same balmy softness in the air; and the same pure and lovely blue sky, with white fleecy clouds floating across it. The chief difference lies in the absence of flowers, and the presence of leaves. But the foliage of November is so rich, and glowing, and varied, that it may well supply the place of the gay blossoms of the spring; whilst all the flowers of the field or the garden could never make amend for the want of leaves, that beautiful and graceful attire in which nature has clothed the rugged form of trees,—the verdant drapery to which the landscape owes its loveliness and the forests their glory. If choice must be between two seasons, each so full of charms, it is at least no bad philosophy to prefer the present good, even whilst looking gratefully back and hopefully forward to the past and the future. And of a surety, no fairer specimen of a November day could well be found than this,—a day made to wander

'By yellow commons and birch-shaded hollows,
And hedgerows bordering unfrequented lanes.'"

The most striking characteristic of this month is the falling of the leaves of most kinds of deciduous trees; hence, on this continent, autumn is more commonly and significantly designated the *fall.* The melancholy sensations which attend this gradual death of vegetable nature, by which the trees are stripped of all their beauty and left so many monuments of decay and desolation, forcibly suggest to the reflecting mind an apt comparison to the fugitive generations of man. This quick succession of springing and falling leaves has been beautifully applied by Homer as translated by Pope:—

"Like leaves on trees the race of men is found,
Now green in youth, now with'ring on the ground.
Another race the following spring supplies;
They fall successive, and successive rise:
So generations in their course decay,
So flourish these, when those have pass'd away."

Respecting the keen and chilling blasts so characteristic of the decline of the year, especially in this country, and which too often afford grounds for unreasoning distrust and complaint, the following remarks in the Journal of a Naturalist may be read with profit:—"Those periodical winds, violent and distressing as they often prove, are yet unquestionably necessary in the economy of nature. In the autumn of our year, the foliage of trees and plants, &c., putrifies and decays; marshes and dull waters, clogged by their own products, stagnate, and discharge large portions of hydrogen and carbonic acid, gas, &c., injurious, and even fatal to animal existence: in summer, all these baneful exhalations are neutralised and rendered wholesome by the vast quantity of oxygen, or vital air, discharged from vegetable foliage; but these agents of benefit by the autumn are no more,—consequently the discharge of oxygen is suspended, but the production of unhealthy air increased, by the additional decomposition of the season. To counteract this is probably the business of the storms of wind and rain prevailing at this season, which, by agitating and dissipating the noxious airs, introduce fresh currents, and render the air we breathe salubrious."

Thus we find that the God of Nature is "from seeming evil, still educing good," and making those very tempests, which alarm us with their fury, and which, in times of ignorance, were looked upon as especial tokens of his wrath, the means of purifying our atmosphere and subserving the healthfulness of man. Happy they who, in seasons like this, can retreat to their comfortable homes and gratefully enjoy the blessings by which they are surrounded. To recognise the manifestations of infinite power, wisdom, and goodness in all the changes of nature through the varying seasons, constitutes the highest knowledge; while practical obedience to the Divine will forms the only sure basis of true and lasting enjoyment.

The more important agricultural labours of the year are now closed, and the farmer has only to finish the removal and proper storing of his roots and vegetables. These are matters which demand immediate attention, as frost in this climate, more or less severe, is sure to occur, and many valuable roots are frequently lost for want of timely removal. It is of importance to see, before hard frost sets in, that on the newly-sown wheat lands the water furrows are sufficiently deep and regular to carry off all redundant moisture, so injurious to the young plant, especially in early spring. If farmers would pay more timely attention to such matters than is commonly the case, our crops would materially increase and improve both as to quantity and quality.

As stern winter, with his drifting snows and piercing cold is just at hand, it behooves the careful husbandman to see that his cattle are well provided with dry and comfortable shelter, and a sufficient supply of nutritious provender. There is no more economical application of money than what is expended in securing suitable accommodation for live stock. Unnecessary exposure to damp and cold is most inimical to their health and growth, and it is well known, though so frequently neglected in practice, that stock so exposed require a much larger amount of food to keep them in even a moderate condition.

The occupations which we have briefly alluded to, with others of a similar nature, afford full employment for the short and gloomy days of November, though there are frequent periods of suspended toil in consequence of the state of the weather. The poet Clare thus speaks of November's changing aspect:—

"Thus wears the month along in chequer'd moods
Sunshine and shadows, tempests loud, and calms;
One hour dies silent o'er the sleeping woods,
The next wakes loud with unexpected storms;
A dreary nakedness the field deforms—
Yet many a rural sound and rural sight
Lives in the village still about the farms,
Where toil's rude uproar hums from morn till night—
Noises in which the ears of industry delight.

"At length the stir of rural labour's still,
And industry awhile her care forgoes!
When winter comes in earnest to fulfil
His yearly task, at bleak November's close,
And stops the plough, and hides the fields in snows;
When frost locks up the streams in chill delay,
And mellows on the hedge the jetty sloes
For little birds;—then toil hath time for play,
And nought but threshers' flails awake the dreary day."

—*B.*

STUMP MACHINES.

Mr. Editor,—Can you inform me where I can procure an efficient *Stump-puller*, and the probable cost? My farm is well stocked with Pine stumps; and the soil is mostly clay, and pretty hard to dig.

I lately saw an account, in an American paper, of a machine, called "Willis's Stump Extractor," which, it was stated, would clear an acre a-day: and at an expense of only $10! As you seem to know a good deal of what is going on in the way of new inventions in agriculture, perhaps you can tell me something about this "puller."

Yours very truly, J. M.

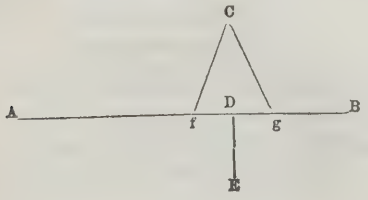
Pickering, Sept. 10, 1855.

—

We cannot inform our correspondent where Stump Machines are made; nor the exact cost; nor can we say absolutely which kind will be found most efficient.

As to Willis's Stump Extractor, judging from the description of its performance by Lieut. Gov. Brown of Massachusetts, Editor of the *New England Farmer*—(the shrewd men of that State make Governors of *their* Editors)—we should say it is a very efficient machine. But we doubt that it will "clear" an acre of Pine stumps in a day; or at an expense of $10. Gov. Brown, who witnessed its operation, does not speak of the amount of work it is capable of, further than to tell us that it upset a large stump in "ten minutes" *after* the chains were hitched.

From the description we infer that Willis's machine is the same in principle, as one we have seen used in Canada, and with much success. It is probably the most *powerful* machine that has yet been applied successfully to stump-pulling. It consists of a strong lever, from 25 to 35 feet long, with a very strong chain attached to it near the large end, which is made fast to an "anchor" stump. On the other side of the lever, and for a distance of two or three feet on each side of the point at which the chain is fastened, strong iron loops, or bolts with eyes, pass through the lever, at intervals of five or six inches. These are to receive the hook of another strong chain that reaches to the stump to be extracted. The small end of the lever is fitted to a wheel—generally that of a waggon. The lever operates between the two stumps to which the chains are attached. The principle may readily be understood from the following diagram:—



Suppose A, B, is the lever; C, the stump to be pulled; and E, the anchor stump; let the small end of the lever, A, be drawn back towards E; and the chain represented by the line C, g, hitched as short as possible. Then, reverse the power, and draw the lever forward as far as it will go towards C;—this will evidently tighten the chains, and shorten the distance between C and E. While the lever is in this position, the chain represented by C, f, is hooked into one of the eyes *between* the fulcrum D, and the power A, i.e., at f. The team is then turned back, and the lever brought to its first position. C, g, made slack by this process, is again hooked tight, and the operation continued until the stump is dragged from its bed. A contrivance, called "shears," is sometimes used in conjunction with the lever; and adds greatly to its power. It is calculated, that with a lever only 18 feet long, or 14 feet from A to D; and the chain attached to a purchase loop, six inches from the fulcrum, and a team, drawing two tons, will give a force of 56 tons at the stump. With the shears 12 feet high; and placed two feet from the stump a force can be exerted equal to 336 tons! A longer lever produces, of course, still greater results.

The chains require to be of immense strength; and even then there is considerable danger in working this machine. We know of one that was made at a cost of £30. Iron and blacksmith work are the chief items.

But we have constructed and used a Stump-puller, this Fall, that we prefer, even to the above. It consists of a strong lever, 25 feet long. We chose a young second-growth maple, about 10 inches at the butt. It is not so elastic, or "springy," as oak or elm, and, on that account, preferable. A strong band of iron is fitted to the large end, and to this is attached a piece of ¾-inch cable, about 4½ feet long, with a strong hook at the end. The team (we use horses) is hitched by a strong clevis to the small end of the lever. The stump must be prepared by cutting off the large roots and by digging, more or less, according to circumstances. When thus prepared, the chain is made fast to a projecting fang, and the team placed so as to bring the lever against the stump. You then "go a-head," if you can, driving round the stump, but taking it with you. The *twisting* power of the lever is immense; and aided by one or two men with another lever under the stump; but on the same side, prying up as the horses pull forward, it must be a very

unreasonable pine-stump that will not immediately give way.

We prefer this stump-puller to any other with which we are acquainted, for the following reasons:

1st. It is cheap. Ours cost, beside the time spent in making it (about a day), $6.

2nd. It is not dangerous; for if the chain should break, the lever will fall to the ground in such a way, that unless the attendants purposely come in contact with it, they cannot be hurt.

3rd. When the stump is pulled, it is not, as with other machines, a greater nuisance than ever! With its great fangs pointing in every direction, and a ton or two of clay adhering to them, it is about as ugly a customer and as difficult to be disposed of as we are acquainted with. The preparatory chopping and digging, therefore, is not lost labour.

4th. It is more portable, and can be much more quickly fastened and worked.

5th. No anchor stump is needed.

Two active men, with spades, axes, and levers, make a very "efficient" machine; and some people prefer this kind of *power* to any other. With the aid of a horse-lever, to twist off the tap-roots, such as we have described, and are now using, we believe as much work can be done at a given cost, as with any other machine.

TRIAL OF REAPERS AT THE PARIS EXHIBITION

We do not place much reliance upon the trials, or the decisions arrived at by the judges, in a case like the present. Testing the *comparatioe* merits of ten or a dozen Reapers is a work of too much nicety, and the details are too complicated and variable to be satisfactorily disposed of by a single trial in a field of *oats*, and conducted by persons some of whom probably, never before saw a reaper.

The following account of the trial is from the Paris *Constitutionnel*, and we must admit that the result, as stated by that journal, agrees very well with what we should expect from our knowledge of the several American machines tried. Manny's machine, if *well made*, is, in our opinion, a decided improvement upon all the combined machines that have preceded it:—

MANNY'S REAPER AT THE PARIS EXHIBITION.

(*From the Paris Constitutional.*)

The second day of August having been appointed for the final trial of all the Reaping and Mowing Machines in the Exposition, the trial accordingly came off on that day. There were ten Machines in the Exposition; nine of them were sent out by the Imperial Commonisssoners; to the place of trial, about forty miles distant. It may be here remarked that the machines were sent out and returned free of cost to the exhibitors. On the ground of the trial there were thousands of people assembled to witness the novelty of the day; large tents had been previously erected, and a large supply of refreshments procured for the occasion. The day was pleasant and the excitement of the immense concourse of people intense. The police were in attendance on horseback. The militia were in requisition with guns and bayonets to keep the crowd of egar spectators from of the grain. Stakes were driven into the ground and ropes drawn from stake to stake, until the entire field of about 15 acres were surrounded. This was a field of an ordinary growth of oats, and standing up well, and which was divided into lots or pieces of about an acre each, by swaths being cut through at given distance, parallel with each other—each piece being numbered, and one Machine allotted to each piece. At the beat of the drum three machines started off together. J. S. Wright's of Chicago. Ill., managed by his agent, Mr. Jewel; Patrick Bell's machine, by Mr. Fourent, and a machine from Algiers. These machines, being calculated to do their own raking by machinery, Wright's machine cut its piece in twenty-four minutes; Bell's in twenty-six minutes, and the Algiers machine in seventy two. The raking or discharging of the grain from all of the three machines was badly done, the grain being much scattered in its delivery upon the ground—Wright's doing much the best. The cutting however, was well done. The mechanical movement of the automaton raker of Wright's machine was truly wonderful. The operation of the machine was highly successful. Bell's machine, by Fourent, did the cutting and gathering of the grain in a very neat manner; the grain was delivered freely to one side of the machine for the binders. After the jurors had carefully noted the trial thus far, the signal again was given, and off started three other machines—J H. Manny's of Rockford, Ill., managed by his agent Mr. Mabie; Bell's machine, by Croskil, and the one-horse French reaper, both failed to cut their pieces; while Manny's did its work in the most exquisite manner, not leaving a single stalk ungathered; and it discharged the grain in the most perfect shape, as if placed by hand for the binders. it finished its piece most gloriously; the jurors themselves could not refrain their admiration, but cried out, "good," "well done." The people applauded and hurrahed for Manny's American Reaper—"that's the machine." Again, after the jury had taken further notes of the trial, the signal was given and three other machines started off on the contest—Hussey's Reaper, by Dray; McCormick's, by McKenzie; and Bell's, by Perry. Hussey's machine cut its piece in thirty minutes; and Bell's failed to finish its piece. Hussey' machine did its work remarkably well, cutting clean and smoothly, and leaving the grain in the track of the machine in good condition for the binders. This machine was conceded to be too heavy and laborious for the team, and leaving the grain in the track of the machine was found to be an objection, as it necessarily needed to be bound and removed as fast as the machine did its work, in order that the machine could pass around a succeeding time; yet this Reaper is unquestionably a good one and may be used to great advantage as it would likely prove durable, being very strongly made. McCormick's machine performed its tack well, cutting a close and even swath, but the raker or attend-

ant, who performed the labor of di-charging the grain seemed to be very much strained, being obliged to ride backward upon the machine, at one end of the reel, having to reach fully across the entire length of the machine with a long handled rake to gather the grain and lay it off of the machine. The horses on this machine were much troubled by a strong lateral pressure against their shoulders, occasioned by the tung of the machine. This Reaper on the whole is much too cumbersome and heavy for two horses. However it has proven itself vastly superior to any of the inventions of the Old World, and from the fact of its great success heretofore particularly at the London Exhibition in 1851, it elicited a good deal of admiration and curiosity. The contest was now fairly narrowed down to three machines, Manny's Wright's and McCormicks. But on starting Wright's again, it broke down, and left the struggle exclusively to the two machines, Manny's and McCormick's. The two machines were then to be changed in presence of the Jurors, from the capacity of reaping to that of mowing. Manny's made the change in one minute. McCormick's in twenty minutes with three men. Each machine made one cut through the field of grass and back, Manny's machine doing the best of the two. Then the change was made again for reaping, and in the same time respectively as before. Then both the machines were taken into a wheat field Manny's machine cut three swaths, and with an ease of action and perfection of work which fairly placed it far beyond any further competition, though McCormick's Reaper cut two swaths, and in a workmanlike manner Even if the two machines were equal as to the quality of the work, yet it was observed Manny's would have the advantage of being the most compact, less cumbersome, and of much less weight than McCormick's, and in Manny's there is no lateral pressure against horses as by McCormicks; also of being much the lightest draft, and more easily adjustable to different heights of cutting, and most easily convertible for the two purpuses of reaping and mowing. This seemed to be the only machine against which there could be no objection urged. We could give no better evidence of the facts above, than the fact that Mr. Mabie had upon the conclusion of the trial several very large offers for the patents of the machines, two of which we heard; for France one offer was one hundred thousand francs, and one of one hundred and twenty-five thousand francs. We have since learned that arrangements have been made for the manufacture of one thousand of these machines in this city for the next harvest.

"The decision and report of the Jury will not be published until the latter part of October, yet all the laurels, we are free to confess, have been glowingly won by Americans; and this achievement cannot be looked upon with indifference, as it but plainly foreshadows the ultimate destiny of the New World."

AGRICULTURAL BOOKS.

The New York *Tribune*, in a recent review of a book on the subject of Agriculture, thus speaks of the neglect usually shown to works of this class by school authorities. From what we have heard, the remarks of the *Tribune* are quite as applicable to Canada as to his own country:—

"And, now that we begin to have a substantial Literature of Agriculture, why do we not find its most approved volumes in our School and other Public Libraries? As yet, we doubt whether there is a single work on Agriculture, no matter how cheap and flimsy, to be found in a majority of our New York School Libraries. We heard the other day, but trust it is a mistake, that out of two hundred and forty-seven works admitted into the School Libraries of Ohio, only *two* treat of Agriculture. However this may be, it is notorious that works on that subject are rarely thought of in making up School Libraries. We propose that a reform in the premises shall commence forthwith. In a farming community, books treating of Agriculture and the kindred arts should form a large proportion of every school library; in cities and villages they should also have a place, though perhaps not to equal extent. If our common schools made their pupils familiar with the principles and most approved methods of scientific farming, we should have far fewer youth and able-bodied men pacing our streets from week to week in anxious, despairing quest of somebody who will give them a chance to earn scanty bread and shelter by measuring tape or posting books. If only to shield the cities from this scourge of redundant, famishing thousands, who will not work where they would, let us have Agriculture taught in our Common Schools."

CANADA AT THE PARIS EXHIBITION.

One great advantage of the Canadian representation at Paris, is the notice we shall attract from our fellow-subjects in the mother country. Every Englishman—we use the word in its largest sense—will naturally feel some interest in the contributions of Canada. At London we made a sort of matter of course display, and were treated in the same spirit, attracting but little notice from the press or people of Great Britain. At Paris we are more conspicuous. We are among strangers; and the parent is naturally anxious to see how the child behaves. The Canadian department at Paris is not what it might have been, if the collection had been undertaken in time, and by proper hands. But still it is more complete, and better arranged than in 1851.

It is seldom that Canada, or its affairs, occupy much space in that Leviathan of the press, the London *Times*. On the present occasion, however, we have attracted its notice; and the readers of the "leading journal of Europe," have been informed of our great merits and capabilities. The following is one of the detailed notices of Canada, and its display at the Exhibition, which has lately appeared in the *Times*. After stating some points of difference between the present Exposition, and that of 1851, the *Times* remarks:—

"Nor had we much inducement or opportunity there to study with the attention which they undoubtedly deserved the contributions of those new States just rising into form and consistency in fresh reigons of the world and moulded from the overflowing materials of European civilization. Of all the subjects of interests which the Paris Exhibition presents to an enquiring mind this last is certainly one of the most striking. What can be more delightful than to be able to watch the first stages of progress in infant communities—how hardily and industriously, applying every resource of modern science and skill, they hew out wealth and independence for themselves from primæval wilds—how they subjugated nature with a rapidity and completeness unknown in any past age of the world, and selfgoverned and self-relying tread with confidence, in the force of the nations, the path of greatness to which their destiny manifestly calls them! That is the touching and sublime spectacle which, with pride in his heart, every Englishman will scan, and making the round of this Exhibition his steps lead him to where our colonies unfould their young resources. Let us take our readers with us through the Canadian department as a specimen of the rest; and invite them to ponder well over the significance of a display possessing little external beauty, but not the less pregnant with that moral and intellectual interest which we have endeavoured thus faintly to indicate. On entering the department, the first object that attracts attention is a great timber trophy occupying the centre, and in which are collected specimens of all the more important results that our adventurous emigrants have won with their axes and strong arms from the "backwoods" of the "far West." There are sections, sound to the core, of the trunks of all the most useful timbers of commerce, including oak, yellow pine, black walnut, maple, beech, birch, cherry tree, and hickory, and close beside the wood itself, its manufactured products, turned out by machinery at a price which even to Englishmen, with their wealth of mechanical appliances, as compared with other countries, appears fabulously low. There are window frames complete, with jealousy blinds on the French pattern, for 7s., and doors with their framing, ready for use, for 16s., and mouldings, 8 inches wide and 100 feet long, at the same price, and capital oak wheel spokes for 5d each, and beautifully shaped handles for axes in the best material for 6d. and oak flooring, ready made, at 20s. per 10 square feet. Even the waste of this branch of manufacture has, in a careful spirit of industry which cannot be too highly commended, been overhauled, and among the objects to which the attention of the European markets is thus invited, gigantic shavings, which give some idea of the scale of the operations in wood, are included. In other portions of the space are exhibited a number of objects further illustratin the advanced state and capabilities of this branch of colonial industry, and among them may be specially mentioned a good strong wooden bridge of 150 feet span, costing only £600, and the parts of a strong box for packing sugar, which go into the smallest possible space when in pieces, can be put together when required at once, and are much better for stowage and in every other way than hogsheads, and cost only 2s.

Following up this subject of manufacturing in wood, we find the Canadians exhibiting, at the opposite end of the Annexe, some excellent and ingenious machines for working in this material. One of these, shown by Mr. Munro, is capable of performing seven different operations in planing, tongueing and grooving. Another, for heavy shipcarpenters' work, by Mr Rodden, besides its special merits, points to what the colony is doing in the formation of a commercial marine; and besides these there is an ingenious nail making machine and other interesting objects. So much for the results which Canadaans enterprise has extracted from the forests which it has to vanquish that these vast provinces of the British empire may be subjected to the full dominion of civilized man. Now let us see what Canada has done in agriculture, next stage in the great progress of such young communities. She has not carried away the prize for the finest cereals, but her display of agricultural produce is upon the whole superior to any other in the cleanness of the different kind of seeds, the evenness of their quality, the compactness with which large samples in proper bulk are exhibited, and the admirable variety in which the most useful fruits of the earth for human use are shown. Not only is the abundant and varied fertility of the soil perfectly illustrated by the actual produce in its unmanufactured state, but the collection includes wheat of the finest colour and grain—biscuit still, after the lapse of months, fresh and palatable to the taste, for 4½d. per lb.—and, more important still a mode of preserving and economizing without salt or other expensive processes the vast supplies of animal food which are at present lost for the want of some simple methods by which they can be brought into the great markets of the world. This preserved meat is exhibited in powder and not in cakes, as was the case with Jael Border's biscuit which attracted so much attention in 1851. It appears, however, in other respects to be manufactured much in the same way, and it is said to possess the same remarkable quality of swelling into bulk when combined with hot water. We must not forget to notice among other striking features of the Canadian display, some excellent specimens of oil-cake, the use of which in the colony, apart altogether from the question of commercial profit in exporting it, marks significantly the advanced state of agriculture there.

It was hardly to be expected that these provinces not yet emerged from the first labours of settlement should, nevertheless, in a rough way have taken count of their mineral resources. Yet such is the case. In this Exhibition the Canadian Commissioner, Mr. Logan, himself the surveyor of the geological structure of the colony, and a man of rare scientific attainments, has arranged a magnificent collection of all that in this field of industry the provinces may be expected to yield. Here are fine building stones, and slate and marbles, masses of phosphate of lime imbedded in calcareous rock, mica and whetstones, and sandstone so pure as to be considered well fitted for use in glass manufacture. Here, also, is a good display of copper ore, rich enough to promise fairly for the future, and great blocks of magnetic iron, containing 65 per cent. of the metal, being in itself a natural loadstone, and extracted from a bed 500 feet thick. Unfortunately, there is no coal. The American fields terminate just beyond the verge of the southern frontier, and this great source of wealth is withheld from the colonists—who shall say for what wise purpose? Perhaps, to stimulate their industry in clearing away those interminable forests interposed between western civilization and the Rocky Mountains. Certainly we may hope to enable Canada to compete with Sweeden in supplying our iron trade with an abundance of the finest quality of iron smelted with wood charcoal. Like Australia, Canada has her goldfields, and Mr. Logan exhibits numerous specimens of nuggets collected there, but, with ex-

emplary patriotism he expresses, in showing them, his bo e that these fields may remain unprospected by the digger, and that the sturdy industry of the colony may escape that source of demoralization.

From the water as well as the land these provinces illustrated in the Paris Exhibition the abundance of their resources. In 1851 they showed a new leather, formed out of the skin of the porpoise, and possessing remarkable strength and durability The novelty on this occasion is isinglass, which is now obtained in large quantities and of the best quality by the colonists, acting on a suggestion made by Professor Owen four years ago. They are not the men to neglect such hints, and the result is that we are now able to look to a fresh source of supply for a valuable material, which until the war commenced, we drew almost entirely from Russia.

Of such articles as edge-tools, boots and shoes, harness, carriages, agricultural implements, and fire-engines, in all which the Canadians have now a species of recognized excellence, their Paris collection is complete. The temper of their axes is superior to that of Sheffield; they show at 2s. 6d. per pair, warm winter boots, such as are used by our troops in the colony, and are admirably adapted for withstanding intense cold in a dry climate. Prince Napoleon has bought one of the beautiful light hickory-built carriages which they exhibit; and, as to the fire engine, Mr. Perry, the shrewd superintendent of the department, who has had some experience in fires, asserts that with 16 men it will do as much work as one of ours with 24.

Such, as a whole, is the Canadian Exhibition here, selected by the Government from local exhibitions held previously at Montreal and Quebec, and sent at the public expense to Paris, to show what can be done by a young community on the furthest verge of our western civilization, with equal laws, and left by England, the mother country, to find its own feet and proper level among the producing Powers of the world. Has the philosophic mind not reason to feel confidence in the future destinies of human industry when it traces in the rising States of the earth manufacturing energies so forward and vigorous, directed to objects so strictly in accordance with the material necessities of the position they occupy.

Editorial Notices.

NOTICE TO SUBSCRIBERS AND SOCIETIES.—We shall be much obliged to those Societies and Subscribers still in arrear for the present volume, for an immediate remittance. Printers and paper makers must be paid and we need every dollar due us to meet their bills Very few Societies have sent forward the amount of their accounts up to the present date. The retention of this money for a few weeks, can be of little service to them, while it is a cause of much embarrassment to us.

DEATH OF PROF. JOHNSTON.—We regret to record the death of J. F. W. Johnston the distinguished Agricultural Chemist and author. He died at Durham, England, on the 18th September. We shall make room for a more extended notice of this learned and world-renowned writer in our next issue.

TORONTO MARKETS.

Nov. 5, 1855.

The demand for all kinds of produce in the Toronto Market for the past month, has been very great, and often has exceeded the supply. Prices have consequently remained high, and for many articles a decided improvement has taken place. The demand for wheat has been unusually active and receipts for the month foot up to almost 80,000 bushels. The price has ranged from 9s 3d to 10s 4d. The greater amount has changed hands at above 10s and for the past week 10s @ 10s 3d has been freely paid. As soon as it is bought, it is shipped to American Ports, where it is mixed with Upper Lake wheat, and converted into extra brands of flour, which finds ready sales at good prices in sea board markets The sample of wheat in the vicinity of Toronto continues to be excellent. Spring wheat is bought at 8s 6d per bushel. Farmers flour has not been plenty, and sells at $8½ @ $9¼ per bl. Barley has been in demand for export, and has sold at 6s 3d @ 6s7d per bushel. For the last week very little above the first figure has been realized. Rye is bought at 6s per bushel. Oats have been exceedingly scarce notwithstanding that a cargo of 5,000 bushels has been received from Chicago. The prices have varied from 2s 9d @ 3s per bushel. Potatoes have become scarce, and 2s 9d @ 3s per bushel has been freely paid. Apples are plenty, both from the country and from the States, and sell at 6s3d @ 10s per bl., according to quality. Butter has been very scarce at 1s 3d @ 1s 6d per lb. Pork has begun to come in and finds ready sale at $6 @ $7 per 100 lbs. Beef sells at about the same price. Wool 1s 3d per lb. Sheep skins 1s 10½ @ 3s 3d each.

SEED POTATOES.

FOR SALE—A quantity of potatoes grown on the Experimental Farm, the seed imported from England two years ago, of the following sorts:—"Goldfinders;" "Early Shaws;" "Kentish Kidneys;" and "York Regents."

The Potatoes will be put up in new two bushel bags; price, including bag, five shillings.—Applicants should be particular in naming the sorts, and the mode of transmission, enclosing the amount to Professor Buckland. As the potatoes are being taken up, immediate orders are requested.

Board of Agriculture.
Toronto Sept. 28th, 1855.

UNIVERSITY COLLEGE, TORONTO.

THE Lectures on the History, Science, and Practice of Agriculture will commence early in November. Young men from the country, can attend during Winter, other classes, such as Chemistry Geology, Natural History, &c, for a very small outlay. Particulars may be obtained of Professor Buckland, Board of Agriculture.

Toronto, Sept 25th, 1855.

TO BE SOLD,

The Property of the East Zorra Ag. Society,

A Fine Agricultural Stallion

16 hands high, dark dappled bay with black mane, tail, and legs, by Old Clyde, out of a Cleveland mare He is five years old this month, and has taken 6 first and 1 second prizes at different Shows For particulars apply to the Secretary of the East Zorra Agricultural Society, Woodstock.

Woodstock, July 18th, 1855. 8-3

ENGLISH CATTLE
IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,
Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs. BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs. Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commission Charged.

Horse,	each,	$30
Bulls or Cows,	"	6 0
Ram or Ewe,	"	3 0
Three Sheep from the same owner, each,		2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner, each,		22
Ten " "	" "	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses, &c., as follows:

Horse,	each,	$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer provision for 30 days.

Horse,	each,	$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels, provision for 60 days

Horse,	each,	$70
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and Col. Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

Breed.	Horse.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel.	I Insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York City.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

		$.	$.	
Thorough Bred Horses, from		100 to 200	1200	
Short Horn or Durham Bull		400 " 1500	700	
Do	Cows	200 " 800	400	
Do	yearling Bull	200 " 1000	500	
Do	do Heifer	175 " 400	250	
Herefords	Bull	300 " 800	500	
Do	Cows	200 " 600	250	
Devons	Bull	300 " 800	400	
Do	Cows	200 " 500	250	
Ayrshire	Bull	150 " 300	300	
Do	Cows	150 " 250	200	
Alderney	Bull	150 " 225	175	
Do	Cows	100 " 150	125	
			Will weigh when killed and dressed	Will shear of washed wool
Cotswold Sheep	Ram	100 to	300 lbs	12to15lbs
Do	Ewe	25 " 100	30	
Leicester Sheep	Ram	100 " 200	120lbs	10
Do	Ewe	20 " 80	25	
South Down Sheep	Ram	100 " 300	112lbs	125 6 to 9lbs
Do	Ewe	25 " 100	30	
Hampshire do	Ram	75 " 125	120lbs	10 6to10lbs
Do	Ewe	15 " 25	23	
Swine	Boars	25 " 50	40	
Do	Sows	15 " 40	25	
Merino Sheep from Spain				
Mules from Spain.				5

SUFFOLK PIGS,
(Directly from Imported Stock.)

THE Subscriber offers for sale, a few of these incomparable Pigs, singly, or in properly selected pairs.

PATRICK R. WRIGHT.

CASTLETON FARM,
Cobourg, C.W., July, 1855. 8—tf.

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture of Upper Canada, No. 2, Vol 1st, pp 160 Toronto: printed and published by Thompson & Co, for the Board of Agriculture.

This work is issued in quarterly parts, four of which will form a volume. The first part embodies the transactions of this Provincial Association from its institution in 1846, down to the commencement of the year 1851 The next number contains an account of the further proceedings of the Association and the Board of Agriculture, Prize Essays, Abstract of County Reports, &c., down to 1843.

The work will be sent free by post for 5s per annum. All communications and remittances to be addressed to the Secretary of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855. 5.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at Cobourg in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND, *Secretary*

Office of the Board of Agriculture }
Toronto, March, 1855. }

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision

A man and three boys can turn out from 5,000 to 10,000 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - - - - - - - - - - - - - - - - - - - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,

Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturists and Horticulturists, that they have received a large and varied assortment of

FARM AND GARDEN IMPLEMENTS

And would solicit a call from parties about to purchase, at No. 77, corner of Yonge and Adelaide streets, Toronto They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand. Reaping and Mowing Machines on the most improved principles, will be for sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second, Bred by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds ; if grade, 50s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (I 621 English Herd Book), was sold in 1853 for $4,000.

FREDERICK WM. STONE.

Guelph, April 24, 1855.

COMBINED REAPER AND MOWER.

Manny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught—the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground ; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $135. We are also manufacturing Burall's Reaper, price $120 ; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, May 6, 1855.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture Horticulture. Farm Mechanics*, and to the advancement of the *Farmers' interests generality* It commences its SEVENTH Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, beside Editoral and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributors to this journal.

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production* and asks no man's support under a false name. It is a true not a spurious *Canada Farmer*.

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Twenty copies or upwards, each - - - - - 2s. 6d.
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*** The *Agricultrist* is not liable to *Postage*.

☞ Newspapers inserting the above will do us a favour, and entitle themselves to a copy without exchange.

WM. McDOUGALL,
Publisher, Toronto.

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THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VII. TORONTO, DECEMBER, 1855. No. 12.

Agriculture, &c.

CLOSE OF VOLUME VII.—REDUCTION OF PRICE, &c.

With this number we complete the *seventh* volume of the *Agriculturist*, and again appeal to our friends, and the friends of agricultural improvement, for another year's support. While we are conscious of many short-commings, and while we admit that we have not, from various causes, been able to devote as much labour and attention to the work as we intended, and may be fairly held to have promised, yet we claim to have given all our subscribers full value for their money. The low price of the *Agriculturist*, and the small number who support it—the extent of the country and the number of those *who ought* to support an agricultural journal being considered—will not justify the expenditure of more time or money than we have hitherto devoted to its publication. For several years, the proprietor found himself annually out of pocket by the enterprise. Still, in the hope that the diffusion of intelligence, the increase of population, the growing necessity for improvement in agriculture, the emulation excited through societies, clubs, and exhibitions, would create the demand for a more extended circulation of the *Agriculturist*, he continued to send it forth on its mission. Our hope has not been altogether disappointed, though several causes, over which we had no direct control, have conspired to limit the circulation of the *Agriculturist*, especially during the past year. Of these, we may mention the introduction, from the States, of an agricultural journal, at one time in good repute, and enjoying a large circulation in its own country, under the pretense that it was a *bona fide* Canadian publication, issued at Hamilton! This spurious concern was be-puffed by certain journals, either from a desire to injure the *Agriculturist*, or because their proprietors had some interest in the importation. It was sent all over the country, just at the season when subscriptions to the *Agriculturist* were about to be renewed, and thus many persons, and even some societies, were charitable enough to take in the stranger, and, we fear, lost their money for their pains. It appears that the managers of this Hamilton enterprise, collected all the money they could from yearly subscribers, issued three or four numbers, and then suspended! When they intend to supply the remaining numbers, we are not informed We did not think it worth our while to notice either the rise or fall of the so-called *Canadian Farmer*, except to pull off its false face; but we were, nevertheless, quite alive to the fact that it would injure this journal, not merely as a rival,—which we knew could not be long,—but by bringing discredit upon the agricultural press generally. It is difficult to ersuade those who have been cheated once

to run the risk a second time. The sins of one publisher are thus visited upon another; and, in this case, *we* are the victim.

Another event may have contributed somewhat to prevent that increase in the circulation of the *Agriculturist* which we might fairly have anticipated,—we refer to the issue of a quarterly journal by the Board of Agriculture. The Journal does not depend directly upon popular favor for support; it is a government work, printed and circulated at public expense. The first two or three numbers were little more than reprints of the *Agriculturist*, but the public are promised, in future numbers, original matter of a miscellaneous description, which will bring the Board's quarterly into competition more or less with other agricultural journals, not so fortunate in their financial arrangements. We do not apprehend any permanent injury to the *Agriculturist* from the circulation of the Quarterly Journal. Official documents are seldom purchased by the public at large, and gratuitous distribution never awakens much interest. For a year or two, we may feel the effect of this new kind of competition, but as soon as the public become aware of the object and character of the respective publications, it will be seen that they occupy distinct fields,—that the one cannot supply the place of the other. We shall be glad to and over to the Journal the dry statics, and the heavy lumber, of which many readers complain, and confine our pages to the useful, the instructive, the practical, and the entertaining.

We have resolved to reduce the price of the *Agriculturist* to *half-a-dollar* in ALL CASES. As it passes through the mails *free of postage*, no one can hereafter object to it on the score of expense. To prevent inconvenience in remitting money, no subscription will be received for less than *two copies* It will be easy for any person wishing a copy, to get his neighbor to take another, and thus remit a dollar at a time. To clubs and societies, the price will remain as heretofore. The limit as to number (not less than 20) will no longer be enforced. Any number from two upwards, will be supplied at $\$\frac{1}{2}$ each.

We intend to make some improvements in the next volume,—in appearance as well as in substance,—but of this we shall say but little, until our arrangements are completed. It is best to let these things speak for themselves.

We solicit early orders, and prompt payments On no other plan can we hope to escape difficulty and embarrassment in attempting so large a reduction of price.

IN-AND-IN-BREEDING.—I perceive by your journal of yesterday, that Mr. Valentine Barford's show of Leicester rams will take place on Wednesday 6th of June. Mr. Barford is said to be the most successful in-and-in breeder of sheep in the kingdom; for he has bred from the pure Bakewell blood for 65 years, without the aid of any other sort or kind, and bred from his own flock for upwards 50 years, maintaining size, weight and constitution. I have known his flock for upwards of half a century, and they appear as strong in their stamina as when I first saw them. Mr. Barford does not use a ram, unless he has a wide loin, a large breast and collar, and very wide between the forelegs, all of which points denote a hale constitution. I have known Mr. Barford's rams to be put to gigantic Lincolnshire ewes in the neighbourhood of Peterborough, which produced sheep that weighed 70 lbs per quarter, or 280 lbs. the carcase, fed by Mr. Bird, and slaughtered and exhibited at Peterborough. Although in-and-in breeding has beat thousands to a stand, Mr Barford still shines in it, which shows his superior judgement. Smithfield, England, May 29th, 1855.—*Mark Lane Express.*

The *Maine Farmer* tells a pretty good story of a case of *garget* having been cured by giving a cow three pounds of sulphur, in the course of the same number of days, and remarks, that the doctor must have been a homœopathic heretic. If the cow's nose had only been dipped in a solution of chlorate of pottassa, and ignited, she would have made a splendid walking lucifer match.

HOW TO SHOE A RESTIVE AND KICKING HORSE.—Procure a sponge and saturate it with chloroform and sulphuric æther, equal parts, envelop the same in the smith's apron—in lieu of a more convenient vehicle—apply it to his horseship's nostrils, and in a very few moments he will be as docile as a kitten Just keep him fuddled—nothing more—and he will submit to the shoeing operation with commendable grace and *non resistance.*

Those who are in the habit of breaking *colts* must in order to be successful, resort to the *lash* of kindness. *Kindness* is a powerful weapon.

ON THE CHOICE OF BROOD MARES.

The following article, by an able contributor to the *Mark Lane Express*, may be read with profit by Canadian breeders:

THERE can be no doubt but that the breeding of horses of a superior description would amply repay those farmers who are possessed of the requisite knowledge; and whose farms present a suitable combination of light, productive, arable land, with pasture of good quality. The price of first-rate horses has advanced in a remarkable degree of late years and it is not likely to decline so long as the country enjoys an ordinary degree of prosperity. It is everywhere matter of complaint among buyers, that good horses never were so scarce as at the present moment; and the man who is possessed of a weight-carrying hunter, or a fine carriage horse, will, if inclined to sell them, not find himself long without a customer. Still, notwithstanding these inducements, the breeding of horses on a large scale is confined to a few districts, of which the principal are the East and part of the North Riding of Yorkshire, Lancashire, and part of Northumberland. On the Yorkshire Wolds it is a pleasant sight to see, field after field, with its half-score of handsome colts; some of them adapted for the chase, while others are destined for London carriage-horses. Though not so plentiful as I remember them some twenty years ago, especially the higher bred ones, they are still to be found in sufficient numbers to show that the farmer considers them a portion of his stock productive of profit, and consequently worthy of attention. Even there, however, breeders might with advantage propose to themselves a higher standard, and aim at producing hunters of the first class, which would surely remunerate them better than leggy and somewhat underbred coach-horses, which are every day less suited to the requirements of customers. One reason why hunters are not bred there so extensively as in former years, is, that farmers, either tempted by the high prices offered by foreigners, or under the pressure of agricultural distress, have, from time to time, parted with their best brood mares. Much is it to be lamented that either good mares or stallions should ever leave the country, they are nevertheless, abundance remaining from which to rear, with judicious management, a valuable breed of young horses. In the hopes of affording some encouragement to the extension of this important department of agriculture, I offer the following hints:—

One of the most important elements of success is the choice of brood mares. Never breed from a mare which is not well bred. By well bred, I do not mean having many crosses of blood; for many mares, nearly and even quite thoroughbred, are very undesirable animals to breed from. A well bred mare, in the true sense of the word, is one of which the progenitors, for many generations back have been carefully selected. In this respect Yorkshire breeders possess a considerable advantage over those who reside in districts where breeding is less extensively carried on. In the former country it is easy for a farmer, even of moderate means, to procure mares which are above the suspicion of being tainted with cart-blood. Owing to the abundance of both thoroughbred and "nag"* stallions, a roadster mare is seldom or never put to a horse of an inferior stamp to herself. Thus, with little or no trouble or cost, a class of mares is in the hands of Yorkshire farmers, where elsewhere it would require much expense and research to gain. With but little of outward show to recommend them, they breed excellent hunters, when put to a suitable thoroughbred horse; whereas mares of similiar appearance in other countries would only produce stock fit for harness—if, indeed, they were fit for anything. The reason is, that in the latter case the cart or other inferior crosses would reappear, and thus baffle the calculations of the breeders.

Perhaps mares, such as the Yorkshire farmers use, are on the whole, the safest for the agriculturist to breed from. Although not so high bred as some others, they are less expensive to purchase, and require less judgment in their choice than those of a more ambitious character. They possess one recommendation which the farmer should never lose sight of—I mean power. Let his object be to produce a colt, which, if it fails as a hunter, will be useful in harness; or if some accident unfit him for fast work, will at any rate take his share of work on the farm. I know no better test of success than this, viz: That the colt which loses a portion of its conventional value, should yet retain its real usefulness. Always make strong well-set-on forelegs a primary object. They should be placed forward, so as to be an efficient support to the animal; and the shoulder ought to stand backward. in order to allow the legs liberty of action; but it must be somewhat round and full, not thin and confined, which some persons conceive to be a *fine* shoulder. Never breed from either mare or stallion with a decidedly bad shoulder. An animal may dispense with almost every other point of excellence, and yet be of some value; but if he has a bad shoulder, it bears so thoroughly the stamp of worthlessness, that nothing else can make amends for this fundamental malformation. If your mare is tolerable in her shoulders, but not very good, endeavor to find a stallion which is particularly excellennt in this respect. The forelegs and shoulders being right, action usually follows. But this being a very important point, do not take it for granted, but subject it to your strictest scrutiny. For my part, I almost think as highly of action in a horse, as Demosthenes did of it in reference to an orator; at any, not even the fabulous combination of beauty, breeding, temper, and shape would induce me to buy a horse which did not possess it.

The foot ought to be taken up straight, by a graceful bend of the knee, and set down again flat, without any deviation either outwards or inwards. the most common faults of action are a sort of shovelling movement forwards, with the knees almost straight, and a sideways motion, either outwards or inwards, with one or both feet. But it is quite possible for the knee to be to much bent, and the foot to be apparently pushed backwards when taken up instead of forwards, thus causing it to be set down too near the place whence it was raised. Objection-

*A "nag" is a roadster. He is less in size than a coach-horse, and better bred.

able, however, as such stand-still action may be in a hack, I should prefer it in a brood-mare to the opposite defect.

The great reason why action in a mare is so essential is, that she having the roadster blood ought to supply it; whereas, it is not always possible to find it in a stallion; it is, indeed, very rare to see a thorough-bred horse whose action is such as would be desirable in a park hack, the roadster, or the hunter. The racing man cares not, provided his horse's head is first seen at the winning-post, in what form he moves his forelegs The qualities which win fame for the racer are speed, endurance, and pluck. The conformation most conducive to speed depends more on the back, loins and hindlegs, than on the forelegs; it is therefore by no means uncommon to find horses, whose performance on the turf have been above mediocrity, with forelegs such as would not wear for three months on the road, and with action such as no man would willingly endure in his hack or his hunter. Thorough-bred horses, with every point such as the breeder would desire, combining power and beauty, equally excellent in their forelegs, their ribs, and their hindlegs, are not to be met with in every neighbourhood, and even when found will seldom cover half-bred mares at all, and then only at exorbitant prices. These are the magnates of the stud that will not condescend to mates of descent less illustrious than their own. If, then, you cannot secure their services, you must avail yourself of the best within your reach. Supposing your mare has the forelegs of the action which I have recomended, you may safely put her to a horse which has tolerable forelegs, provided he is in general power, in pedigree, and in performance such as you desire. I mentioned, in a former letter,, that I once put some mares of my own to "Tom-boy;" his forelegs were by no means first-rate, and his front action was decidedly scrambling and bad; but my mares being excellent in both these point, their stock showed no traces of their sires deficiency. To breed colts with bad forelegs and insufficient bone, is to encumber your land with stock neither useful nor saleable. With mares of first-rate excellence in that respect, you greatly extend the range of stallions which it is safe to put to them.

I shall not enlarge upon other points of the mare in detail, for the reason that their selection may be in general be left to the discretion of the breeder; and also, because there are many of them which in practice will be more frequently supplied by the horse than the mare. I must say, however, that I should not like to breed from a mare with a bad head or small eye. Natural soundness especially in the feet, is very important, and so is good temper. With mares, as with cows and ewes, there is a certain character difficult to describe, but which the experienced breeder knows by instinct, as belonging to those likely to produce good stock. It is not the largest, or the most showy, but those which have a certain refinement of form, and a gracefulness of outline (which are as characterestic of the well bred female, as power and muscle are of the male,) which will most faithfully reflect in their offspring their own merits, and those of its sire. Many a large showy mare, on the contrary, will be provokingly uncertain in her produce; one year bring in a foal as much undersize as next year it is overgrown. Such a mare ought to be discarded at soon as possible.

By observing the course which I have recommended, farmers who exercise ordinary judgment will make as safe an investment as they would in the breeding of any other kind of stock. Their colts will make either hunters, carriage horses, or hacks of a useful and powerful kind.

There is a class of mares much higher than that which I have described above; I mean those which combine great power with a pedigree little short of thorough-bred—mares which have in their youthful days been foremost in the hunting-field, and contended, perhaps not unsuccessfuly, in the steeple chase. Such are the dams of the cracks of the Melton field and of the victors at Liverpool and Leamington. But they are so difficult to buy, and so rarely in the market, that the majority of breeders have but little chance of trying their luck with them. Their owners naturally desire to secure a foal, when it may be a great prize, won at a small cost, and will therefore seldom be disposed to part with them. It requires, moreover, a more ripened judgement, and more mature experience, to select mares fit for the production of firstclass hunters and steeple-chasers than for the rearing of a less ambitious character of stock. The stallion to which they are put ought to be one of superior class to the majority of the itinerant animals which secure the custom of so many farmers, simply because they save them the trouble of further enquiry. It may be laid down as a general rule that the horse ought, if possible, to be a better animal than the mare. Then there is the difficulty, even when a horse of tried excellence is found, of discovering whether his points and his blood suit the mare. The art and the science of breeding first rate horses, are not to be mastered without much thought, trouble and research. There is no royal road to it. He who is wise, in spite of every obstacle, to attain golden results, must adopt a course the very antipodes of the too common one, of putting some mare, because he happens to have her, to some horse, because it happens to come into his yard He must never breed from a bad mare or a bad horse; nor must he grudge a few pounds spent in securing the best of either sex within his reach. A judicious outlay of capital will here assuredly not fail to reap the reward which has attended the improvement of every other description of stock.

GROUND OATS.

The Drought which has prevailed for many weeks up to the present time, will cause an *upward tendency* in the price of *fodder*; consequently, every farmer and yeoman must study practical economy in that important department of husbandry termed *feeding* and *rearing*.

The first experiment we shall advise them to make in view of *feeding* and *rearing* horses, is, to have their oats ground. *Ground* oats furnish more nutriment, and keep the bowels in better condition, than when served out whole. By grinding the oats we separate them into a myriad of particles, and pre-

sent them to the gastric solvents in a form calculated to secure their speedy digestion—in fact, they are in a condition favorable to a speedy insalivation.

Ground oats are more nutritous than *whole*, for the same reasons, that flour is more so than unground wheat.

Ground oats contain more of the nitrogenous, or flesh-making principle, than any other kind of horse food; at the same time they furnish a mixture of *coarse* and *fine* food—the husk of oats constitute the first, and the meal the latter. The coarse material serves to keep the bowels in a soluble condition—irritate and excite the muscous coat, and thus obviate the necessity for drastic medicine. This kind of food is decidedly the most economical for working horses. They require, however, a certain quanitity of sweet hay, in view of distending the stomach to a healthy capacity.—*Am. Veterinary Journal.*

CONDITION OF CATTLE BEFORE WINTER.

It is of great importance to the farmer that his domestic animals are in good condition at the setting in of winter. A goodly quantity of fat, "well laid on," as the sentence runs for flogging a culprit, will carry an animal through a hard winter, when another, equal in constitution and in all other respects except the one indicated, would be certain to perish. One of Nature's own provisions against a frigid climate is an abundance of fat. Fur outside and grease within characterize nearly every class of animals which live in the polar zone. The farther north we go, even to the limit of animal existence, the more this peculiarity manifests itself; and the whaler is never so successful in laying in a cargo of oil, as when he manages to escape the icebergs and pursues the leviathan far within the Arctic circle. The Polar bear is the fattest of his race; the seal, the walrus, and even the birds of those regions have these peculiarities. These things are mentioned for the purpose of verifying a general principle, viz., that abundance of fat is one of the provisions of nature against the rigors of climate. Any farmer who has half an eye for observation, has not failed to perceive with how much more ease and comfort, and with how much less sensibility to cold, a fat animal, over a lean one, gets through the winter. Turn them out of shelter while a keen gale is blowing from the north; let them drink at a hole cut in the ice, were the water is thick with mingled snow, and while the latter shivers in every joint as if seized with an ague fit, the former really seems to enjoy it as a recreation, drinks his fill with perfect deliberation, and then returns leisurly to his stable.

It costs a farmer more to keep poor animals than it does those in decent flesh. This may seem paradoxical, but it is true notwithstanding. We grant that less grain and fodder may be fed in the former case, but the returns will be diminished a hundred fold. Is it the prosperous farmer, who does the most work and does it best with his teams, the man whose horses are mortgaged to the crows, and whose oxen are scarcely decent food for dogs? Is it the money-making dairyman, whose milch cows are so thin that all the juices of their carcases would secrete little else than a few gallons of water? Is it the owner of lean swine, whose pork when brought to the market commands the highest price? We leave each of our readers to answer these questions in the light of his own experience.

The loss of animals by disease and casualty is no mean item in the account; and the rule will be found invariable, that the farmer who keeps his stock in best heart by providing abundant and wholesome food and warm shelter, will suffer least in this respect. It may by some be deemed unworthy of mention, but not by farmers who save their manure and apply it carefully to their fields, that the excrements of well fed cattle are much more valuable than those of ill fed ones. If an animal is fed on hoop poles, of course the manure would be about equal in value to moderated sawdust. French chemists have demonstrated, both by the vegetable results of its application and by analysis, that the night-soil of a well fed population, into whose food meat and the better grains enter largely as a component, is vastly more valuable as a manure than that of a people whose chief aliment is vegetables and fruit composed in a large part of water and woody fibre. The same rule holds good of animals,—the richer and more valuable will be their manure. This of course is a small argument compared with others in favour of generous feeding, but it points in the same direction, and is cumulative evidence in that behalf.

Now is the time to have an eye especially turned to the condition of our animals, as the winter is nearly upon us. They will as yet pick up much of their living on the field, but partial auxiliary feeding earlier than usually resorted to, will be bery beneficial. —*Rural N. Yorker.*

THE TURNIP CROP IN GREAT BRITAIN.

It appears that the Turnip crop over a large part of England has turned out but poorly the present season, thus tending to keep up the price of food. The following extract from the *Mark Lane Express*, the leading English authority on crops, markets, &c, will be read with interest in Canada. The remarks on the evils of a succession of the same or like crops upon the same land for a series of years are worthy of consideration by many farmers on this side of the Atlantic:

The injury sustained by the turnip crop must ultimately be felt severely. Throughout the eastern and home counties, a failure will be fonnd to exist greator than has happened for many years. First came a defficiency or total destruction of plant by the fly; then drought and meldew, accompanied by smother fly [*aphides*] succeeded; and in many localities the leaves have become withered and dried up so entirely, that scarcely any vegetation is now apparent. We are speaking of the Swedish variety; but the common or white turnips are little better. What with failure of plant, excess of drought, black caterpillar, fingers-and-toes, besides other pests, consisting of grubs in the crown and at the roots, the injury is general, and the crop upon the whole, worse than we have witnessed for many years; and, whether in our gardens or fields, the entire *Brassica* tribe has failed beyond a precedent. Fortuately, the mangold-wnrzel is more extensively grown than usual; and, owing to the prevalence of exceedingly fine weather in the spring months and at the present time it promises to become a most abundant crop.

The potatoes also become rather generally attacked with disease; but. fortunately, very few of the bulbs have become affected: and the crop, upon the whole, may be pronounced a good one.

We have been induced to enter upon this subject for the purpose of showing that the difficulty of obtaining

large crops of turnips from the same land is yearly increasing, and to point out the advantage to be derived by a more extended cultivation of mangold wurzel, for on all descriptions of soil too heavy for producing turnips, its cultivatton may be adopted with the utmost certainty of success, of all the known cultivated root-crops it is less liable than any other to become attacked by insects or by meldew or blight of any description. Provided the temperature is high enough, and the moisture moderate, it flourishes almost without interruption ; and its keeping in perfection for so many months together without the slightest deterioration, places it, in our opinion, at the head of our winter supplies of cattle food.

An opinion has become prevelent that mangold-wurzel is not calculated for feeding cattle before Christmas, and not even then with advantage until Feburary is past ; and we confess that for many years we ourselves laboured under the same misconception. But we have since discovered that the cause did not arise with the roots themselves, but in the mode of their application ; and if instead of feeding cattle upon them alone, they are combined with sufficient cut-straw chaff, none of that violent scouring will ensue, and both roots and leaves may be used with decided success by the combination.

With the Swedish turnips, the same mode of application may be made, with advantage ; but it does not become in their case, absolutely necessary that such practices should be followed, as they are not liable to produce relaxation of the animals to any extent so as to become injurious when used alone. But it must have become notorious that they yearly become more difficult to produce upon land on which they have been continuously grown for many years, whilst the numerous deseases to which they are liable, and the attacks of insects to which they are subject, renders them more and more difficult to obtain as we proceed ; and that upon most land which has been devoted to their production, a progressive depreciation, both in quality and quantity, has been for a long time taiking place ; and with the common turnip a similar depreciation is equally apparent.

The potatoe is also another example of a root depreciating in quality, and becoming liable to diseases which a few years ago were not known to prevail ; and the extreme difficulty that we now have to secure a crop of this valuable esculent has become so apparent, that, under certain conditions of temperature and moisture ensuing, little chance exists of securing a crop of healthy tuburs.

The attack that has taken place this season has, we believe, been almost as universal as in other years when nearly all the tuburs were destroyed, and would doubtless have been attended with like results had the temperature fallen as low as upon previous occasions. The amount of rain that has fallen during their growth has also been less—not, perhaps, in precise quantity, but less in saturating property, owing to the extreme dryness of the sub-soil, consequent upon the absence of almost any rain having for nearly a year previously penetrated to any considerable depth and it is entirely to these circumstances that we attribute the successful result that is this season accomplished.

From the closest observations we have been able to make, we have invariably found, upon the same plot, that those plants least exposed to cold and moisture uniformly escape with least injury ; and in several instances that have come under our notice this season, we have observed that the stems have not been affected where the plants were growing next a wall or other shelter, whilst those that were farther removed from such protection, suffered to a greater or less extent in proportion as they were removed from it. In the memorable blight that first occurred, the same result then took place as regarded the greater or less injury sustained by the tuburs ; and although the latter this season have escaped injury, had the temperature fallen a few degrees lower for two or three days at the period when the rain had become prevalent in July, the same catastrophe would most probably again have happened.

It is not our intention to urge this subject unnecessarily. Our object is rather to show that the continuous propagation of any description of plant upon the same land for a series of years tends to a depreciation of its productive qualities, and that such depreciation is pretty certain to be adopted to prevent such a recurrence? We hold that a change either of the land or description of crop is that obviously the best to secure that end. If after Swedish turnips or cabbages mangold wurzel or potatoes were grown in the next rotation, and then common turnips or rape, and so on from year to year, so as to obtain the longest period possible betwixt the cultivation of any description of crop in particular, the oblect would to a great extent become attained. Upon a proper rotation of crops the main success of all cultivation depends ; the cereals alternating with the legumes, root crops, and grasses, constitutes the true application of the science of agriculture. Will it not, then, be attended with corresponding success to produce an alternation with our root crops, as before stated? So firmly are we convinced of this, and so rational must it appear to others, that we believe we should hardly be accused of making converts to our opinions, but we trust, notwithstanding, that we may calculate upon being the means of directing investigation and inquiry into its right channnel, and also for a beneficial purpose.

CURE OF DESEASED POTATOES.

On Tuesday last, we witnessed the experiment of Mr. Meekins, in the cure and preservation of diseased potatoes, in Leinster Lawn, the premises of the Royal Dublin Society, according to the public announcement. The experiment was made on half a ton of potatoes, in the proportion of two hundred-weight diseased, to four hundred-weight sound potatoes, and has been conducted in the following manner :—The sound and unsound potatoes are mixed, and packed in a potato pit on the common plan, in layers of single potatoes, like eggs for transit, and then some finely-pulverized subsoil, from Mr. Meekins' farm, spread over them so as to fill the spaces between, on which another layer of potatoes are packed, and so on till they are built up in the shape of the common potato pits, covered with straw, and then again with earth in the usual manner, where they are to lie entombed till February next. Such is Mr. Meekins' mode ; the subsoil has not been mixed with any composition, and Doctor Davy, the chemist to the Society, has got a parcel of it for analysis, as also a parcel each of the diseased and sound potatoes, on which he will report hereafter. It will be recollected that Mr. Meekins exhibited some potatoes at one of the evening meetings of the Society during last session, and also a large parcel at the last spring show of the Society, which were perfectly cured. He has now made the process public, and we hope many of our readers will this season put the above simple process to the test of actual experiment. That it succeeded with Mr. Meekins, at Glasthule last year, there can be no doubt, but that it will

continue to do so remains for further experiments to prove. Mr. Meekins says it may or may not succeed, but that it has done so; and the mode he has laid before the public, who will enjoy the benefit of it if it does succeed."—*Irish Farmer's Gazette.*

PROSPECT OF THE GRAIN MARKET.

We copy the following able and interesting article, interesting to wheat growers especially, from the New York *Tribune*, one of the best conducted Journals in the United States:—

Believing that the true position of our supply of wheat for the ensuing year is not properly understood either at home or abroad, and that it is the highest consequence, both here and in Europe, that a thorough knowledge should be had at an early day, we proceed to lay before the public some facts and figures which seem to us to cast light on this important subject.

The United States census for 1850 gives the whole product of wheat in the Union for 1849 at 100,485,944 against 84,823,272 bushels in 1839. The annual gain during the ten years was equal to about one and a half millions of bushels. Those ten years were a fair average as to productiveness and increase of population. It will therefore be safe to base estimates of future products upon these results. But that we may better understand the subject, we give below a table showing the amount produced by States in the years 1839 and 1849—putting those States together which produced less than half a million of bushels:

	1849. bushels.	1839. bushels.
Arkansas, California, District of Columbia, Connecticut, Delaware Florida. Louisiana, New Hampshire, Rhode Island, Mississippi and Texas	1,125,373	1,442,499
The Territories	517,5562,	
Alabama	294,044	838,052
Georgia	1,088,534	1,809,830
Illinois	9,414,575	3,335,393
Indiana	6,214,458	4,049,375
Iowa	1,530,581	154,693
Kentucky	2,142,322	4.803,152
Maine	296,259	348,163
Maryland	4,494,680	3,345,783
Michigan	4,925,880	2,157,308
Missouri	2,981,652	1,037,386
New Jersey	1,691,190	774,203
North Carolina	2,130,102	1,960,855
New York	13,121,493	12,286,418
Ohio	14,487,351	16,571,661
Pennsylvania	15,367,691	13,213,677
South Carolina	1,066,277	968,354
Tennessee	1,619,386	4,569,692
Vermont	535,955	495.800
Virginia	11,212,616	10,109.716
Wisconsin	4.286,131	212.116
Total	100,485,944	34,823,272

By this table it appars that there was a loss in eighteen States during that period of about eight millions of bushels, while in fourteen there was a gain of about twenty-four millions, making the actual gain as before stated at about sixteen millions in the ten years. Thus, if there be no disturbing cause, we might expect that the wheat crop of 1855 would reach about one hundred and eight or ten millions of bushels; we will assume it to be the outside figure.

The present population is twenty-five millions, from which should be deducted the slaves as they do not cousume much wheat; this leaves at least twenty-one millions of consumers of wheaten bread. Allowing half a pound of flour per head per day, the annual individual consumption would be equal to four and a half bushels of wheat, and this would require ninety-four millions of bushels for home consumption. The census estimates the number of acres sown in 1850 at eleven millions. At the same estimate the number for 1855 would be twelve millions, and as two bushels per acre is the usual quantity sown, it would require twenty-four millions for seed. If, therefore, the price of wheat was down to its lowest point, there would not be enough raised by the above estimate, to meet the demand by about eight millions of bushels.

Since 1850, however, there have been disturbing causes that did not exist previously. Wheat has been in great demand for three successive years, and has borne good prices during all the past five years. This has stimulated its cultivation, and probably there were more acres in wheat in 1855 than ever before. It may be safe to admit that in nearly all the States where there was a loss before there has now been an equal gain. This would give about eight millions of bushels from that source. The other ten millions which we admit to be gained in the natural course of events, must have come mainly from the new States. For, the older States have nearly all their wheat lands under cultivation, and cannot materially surpass the yield of 1850, unless there should be an uncommon season in which larger quantities than usual are grown to the acre. This is particularly the case with the great wheat growing States of New York, Ohio, Pennsylvania and Virginia, whose crop in 1839 was 52,680,872, and in in 1849, 54,189,156 bushels, being in the latter year more than one-half of the whole crop of the Union, while the gain in the ten years is only a million and a half of bushels. From their proximity to the Atlantic markets, these States must be the great exporting States, and upon their crops more than upon the others the surplus depends.

But while there have been such inducements to increase the cultivation of wheat, there are some countervailing considerations which must not be overlooked. In the first place, most of those States which show the largest increase in the production of wheat are not naturally wheat-growing States, Indian corn being their most certain and staple crop. If, then, there has been any inducement to an increased cultivation of corn, wheat will be neglected. This is particularly the case with portions of Wisconsin, all of Indiana and Illinois, and most of Kentucky. During this time, corn has borne a high price, and beef and pork have gradually appreciated in value until they have reached such a point that there is little inducement to grow wheat to any great extent in those States. It is undoubtedly true that the cultivation of wheat has not materially increased in either of them. So, too, the tide of emigration has been sweeping past Michigan so rapidly that no marked increase, probably in the first of three millions and in the latter as much more, making possibly in these two States an increase of six millions of bushels. Thus, allowing the States which lost before to make up the loss, and that the other States have increased at the rate of a million and half of bushels per year, and that we have this year a full crop, the most that can be claimed with any show of truth is one hundred and twenty-four millions of bushels for the entire crop of 1855. As the old stock is exhausted, we must look to the present one alone. In ordinary years, this would show a fair surplus of about six millions of bushels that might be exported without affecting the market.

Thus far, we have assumed that there was a full crop in the year 1855. But we will now proceed to show

that there was not even and average crop. To the casual observer, the crop of Winter wheat gave, during the Spring, all the tokens of being a remarkably heavy one. The observant farmer, however, when he examined his fields, could discover that his wheat was more than commonly thin, and that the plant did not tiller as well as usual. This was owing to the dry weather last fall, which prevented a good deal of the seed from germinating, and enabled the fly to destroy more; and also to the severity of the winter, which killed more or less in the best soils. The only hope for good crop lay in having a cool, moist season to enable the heads to fill well. Beside, the ravages of the midge in New York, Ohio, and Pennsylvania, and the joint-worm in Virginia, during the past two years, so discouraged the farmers in many parts of those States, that less land was laid down to winter wheat than usual, though the deficiency was more than supplied, by spring-sown wheat. Finally, when the time came for harvest, there was a fair promise for an average crop, and nothing more. But the result of the weather in New York, and much of Pennsylvania, Ohio, Michigan, Indiana, Illinois and Wisconsin, was such that in quality and quantity it is deficient at least one-third. This would give at the lowest estimate full twenty millions, so that in reality there are about one hundred and four millions to supply our own population with bread, and seed for next year's crop.

There is then in reality no surplus in the Union All that is taken away must be at such prices as will induce or compel the people to substitute other food for wheaten bread. Potatoes, corn and buckwheat are reasonably abundant and, should the price of wheat warrant, will be largely substitued. But with the present high price for beef and pork, there must be limit to their consumption. That with an increased price for wheat and flour a surplus to the amount of ten or fifteen millions may be obtained we have no no doubt; but we do not believe that in addition to what is to come from Canada, the surplus can be forced beyond twenty millions, unless prices rise much higher than ever before.

PRICES AND WAGES IN ENGLAND.

The following is from the *Mark Lane Express* of the 22nd Oct.—: The average price of wheat for the six weeks ending October 6th was 75s. 11d. per qr. The average for the corresponding period of last year was 56s. 7d. Wheat is therefore 19s. 4d. per qr. higher than it was this time last year. It was then little above that mystical 56s. which when we were in the lowest depths of agricultural distress, all looked up to as remunerative, while there were even some, and those not amateurs, but men whose sole dependance was upon farming, who did not hesitate to declare that they would be satisfied with 50s. per qr. No man can deny that present prices are remunerative, or that if they are not, a further rise will be powerless to make them so. The prudent farmer dreads a futher advance. He knows that, sooner or later, it must be followed by a decline, and he knows that in many items of the cost of cultivation expenses must increase as prices rise. He sees that landlords are more interested in high prices than tenants, unless, which is impossible, those high prices can go on indefinitely increasing. His rent, he knows too well, must ultimately follow prices. If he holds as tenant-at-will, he may be certain that his landlord will not continue to pay 30 per cent. more than he has been accustomed to pay for bread, meat, butter, cheese, and other articles of agricultural produce, without looking for an advance of rent. If the farmer holds under a corn rent, and we know many who do, he looks with anxiety to every rise of the markets, lest he should have to pay rent on a scale higher than that at which he has sold a large portion of his crop. And he knows that, with the experience of the past before them, landlords are unwilling to grant leases at a fixed money rent which they know will only bind them while prices are expanding, and that when the times of depression come they have to make abatements. The prudent farmer, again, is unwilling to bind himself to a fixed money-rent for a term of years based on prices which may not be permanent.

Then again, seed and horses consume as much of the produce whether wheat and oats be selling high or low. As for manual labour, too, the farmer knows that, instead of two men looking after one master two masters are now looking after one man. Those districts which depended on a periodical influx of Irish labourers for their harvest, receive them no more. They have solved the problem of a self-supporting emigration. The Highlanders who performed in the same way the periodical labour of the Scottish lowlands are emigrating to Canada, where they can obtain land of their own. The English rural population are shaking off their dread of foreign parts; they are acquiring a better kuowledge of them, and of the prospects they afford the poor man of becoming a landowner, and employer of labour himself. We cannot take up a local paper, be it English, or Irish, or Scottish, but we meet with statements of the scarcity of hands and the rise of wages. Under this state of things the landlords, with a few insignificant exceptions, are quite as much disposed as the farmers to let bygones be bygones, and to accept the change as an accomplished fact. We consequently rarely hear at our agricultural meetings declarations on agricultural grievances from that class: on the contrary, they appear more disposed to devote their enegies to improving the moral and social condition of the agricultural labourer. The clergy are zealously seconding their laudable exertions, if indeed they did not originate the movement,

TURNIP SWEEPSTAKES.

We give below the report of the Judges appointed to decide the Sweepstakes, amounting to £27-10,—for the best two acres of Swedish Turnips, taking quantity and quality into consideration. This competition was got up under the auspices of the Township of Etobicoke Agricultural Society, one of the most flourishing Societies in the Province, each competitor depositing $10. Last spring eleven farmers entered the lists, but it appears that all did not compete.—Mr. Alexander Shaw, of Toronto, who is so favourably known as a successful cultivator of root-crops in general, was the winner. From the details given in the Report it will be seen that with proper care and treatment, the soil and climate of Canada are far more favorable to the culture of the Swedish Turnip than is generally imagined; and there is good reason to hope that this important department of husbandry will continue to receive increasing attention. —We shall be glad to hear that similar enterprises are commenced in other districts. A widely extended benefit must be the necessary result:—

Toronto, Nov. 13, 1855.

Report of the committee appointed to decide the sweepstakes for the best two acres of turnips among the undermentioned competitors:—

E. Musson, Esq.: President, Etobicoke, Agricultural Society,—

Sir,—We the undersigned, Judges of the Sweepstakes for the best two acres of Swedish Turnips, beg respectfully to report as follows:

On Tuesday November 6th, we commenced a tour of inspection, calling on the different competitors in the following order:

1. Mr. W. R. Scott, of Mimico; but as he declined competing, and being anxious to proceed with as little delay as possible, we did not see his turnips.

2. Mr. Richard Withers also declined competing. We saw his turnips, which in some places were good, but as a whole very uneven; they were sown too late and had not received the cultivation necessary for procuring a large crop.

3. Mr. Wm. Duck, near Port Credit. A pretty piece of turnips, but few vacant places, bulbs of medium size, of good quality well adapted for the table, rather too thick and in a growing state; sown broadcast July 9th, manured with barn yard dung, of about 15 wagon loads to the acre; soil, a pretty loamy clay; cropped the previous year with oats; well cultivated and quite clean. Measured off a square of 25 feet, or 625 square feet, being within a fraction of the 70th part of an acre, as a fair average of the two acres; topped and rooted them in the ordinary way, and found the yield to be 5 bushels, or at the rate of about 360 bushels per acre. Mr. Duck's crop would evidently have been much larger in weight if he had sown earlier and in drills. The variety was the Purple top, and pretty pure.

4. Mr. Donald McFarlane, Etobicoke. As Mr McFarlane declined competing we took only a general view of his turnips, a large portion of which, under ordinary circumstances, would be pronounced good. It was a heavier crop than Mr. Duck's but not near so even nor so well cultivated. Weeding and hoeing had not been sufficiently attended to during the harvest. Notwithstanding it will be a paying crop. Purple top, a portion quite pure—sown in drills from 10th to 13th of June. Soil fresh and rich but rather heavy and wet.

5. Mr. John Clayton, Mimico. A beautiful looking piece of Purple-top, sown broadcast June 13th, after a good dressing of barn yard manure; well cultivated and set out, but the plants generally were too thin. Fair sized bulbs of excellent quality. A square of 25 feet, taken as an average of the whole, yielded 10 bushels, being at the rate of very nearly 700 bushels, per acre.

It is proper to remark that Mr. Clayton's soil is a light sand, which in its natural state produced nothing but pine and inferior brushwood, and was considered a few years since quite worthless for cultivation. The present result cannot be otherwise regarded than as highly creditable.

6. Mr. Wm. Gamble, Milton Mills. We found here about six acres of turnips in a field of very uneven surface, which must have required no small amount of skill and capital to have brought it into its present highly productive condition, from a recent state of comparative worthlessness. The soil like the former case, is a light sand, forming a part of the Humber plains, Purple-top and Laing's improved, sown in drills about 30 inches apart, after a liberal dressing of manure, consisting, we understand, of farm yard dung and a slight dressing of Guano.

The bulbs on the top and drier part of the field were of great size and pretty uniform, but there were many blank places. Laing's improved, although not so large as the Purple-top, looked beautifully, so true and even. This was a specimen of turnip-culture, which would be rarely exceeded in the finest parts of Britain. A space of 26 feet, taken as an average of the upper portion of the field, including both Purple top and Laing's improved, yield 12 bushels; or at the rate of 875 bushels per acre. Night coming on we had to postpone examining the remainder to another day.

In consequence of the extreme wetness of Wednesday, we did not resume our task till Thursday morning, November 9th, when we visited—

7. Mr. E. W. Thompson, of Aikenshaw, township of York. The soil, like that of the two preceding cases, is a loose sand, formerly thought little of and neglected, but by judicious manuring and proper treatment, it is capable, as is apparent on Mr. Thompson's farm, of producing renumerating crops. The turnips consisted of Purple-top and Laing's improved, drilled in rows about 27 inches asunder. The whole of the ground had been manured with farm-yard dung—about 40 cart loads to the acre, with about 250 lbs. of Guano in one part, and 8 bushels of fine Bone-dust in another. The difference was not very preceptible but the bones seemed to have increased the growth of the tops. From some cause or other the plants did not come up thick enough, consequently there were numerous blanks—so much so as to diminish the crop—probably 25 per cent.; 25 feet square yield 10 bushels, being at the rate of 700 bushels per acre. The crop proved much better than mere appearance indicated. The seed was sown too thin, only 1 lb. to the acre. We would generaly recommend 2 lbs. per acre, at the least.

8. Captain Shaw, Toronto. The field lies near Trinity College, consisting of a rich, sandy loam, the lower part rather wet. It was manured with farm yard dung, about 35 cart loads per acre, and sown in drills 24 inches apart on June 7th, with the Purple-top kind. The whole appeared all but perfectly uniform, with scarcely a blank worth mentioning. Every thing evincing the most skillful and attentive management.

The first average taken, yielding only a peck over that of Mr. Gamble's, we were induced to try two others with the following results:—

1. 25 feet square—12 bushels; at rate of 892 bushels per acre.

2. 25 feet square—14 bushels at rate of 1015 bushels per acre.

3. 25 feet square—13 bushels; at a rate of 945 bushels per acre.

9. R. A. Goodenough, Toronto, Soil a strong loam resting on clay, highly manured the previous year, and cultivated in the most thorough and perfect manner. Purple-top and a few of Laing's improved sown in rows 33 inches apart the last week in June, and nicely set out in the drills at wide and uniform distances. Everything denoted that no labor or expense had been spared, and to appearance the crop looked remarkably luxuriant,—the tops being green, juicy and growing. It was a pattern of neat and exact cultivation. There were no blanks worth noticing, and the whole crop was evidently so uniform as to render a choice for an average a matter of indifference. We selected two, which yielded as follows:—

1. 25 feet square including a relative proportion of each sort yielded—10 bushels, or 700 bushels per acre.

2. 25 feet square, (all Purple-top) yielded—10 bushels, or 825 bushels per acre.

We are of opinion that the great width of the drills and heavy manuring of this kind of soil, have acted injuriously on the crop. The spaces between the turnips were too great, and the vacancies were in a great measure hidden from the excessive growth of tops, stimulated by the richness of the soil, which was much better suited to cabbage than turnips.

Having now completed our assigned task, and having ascertained that the competition lay between Captain Shaw and Mr. Gamble, and although we felt pretty well assured that the former was the winner, yet as we had taken only one average of Mr. Gamble's turnips, and feeling anxious not only to satisfy ourselves, but also all others interested in the result we might bring out, we determined to go back to M l on at once, and take two more averages of Mr. Gamble's crop. The result was as follows—

1st—25 feet square (formerly taken) yielded 12 bushels, or 875 bushels per acre.

2nd—25 feet square, yielded 13 bushels, or 945 bushels per acre.

3rd—25 feet [taken at the lower end of the field], yielded 9 bushels, or 665 bushels per acre.

Having, as we believe, fairly ascertained the above mentioned facts, we feel it to be our duty to award the sweepstakes to Captain Shaw, of Toronto, whose turnips appear to have been sown and set out at those distances, suited to the soil and season, so as to yield the greatest amount of produce on a given space. We have been much gratified in witnessing the results of several of these specimens of turnip culture, and cannot but hope that the tendency of such kinds of competition will be highly beneficial. And we would respectfully suggest, in case of any similar enterprise for the future, that two, if not three prizes should be awarded.

GEORGE BUCKLAND.
JAMES FLEMING.
GEO. LESLIE

THE MONTHS—DECEMBER.

"Nor field nor garden now invites
The rambling step to new delights,
Nature to man, and bird, and beast,
Proclaims a dull unwonted rest.
Aside the inactive plough i id.
The adhesive mould the clotted spade
Defies. Beneath the sheltering hedge,
Beneath the starks o'erhanging ledge,
The herds and flocks, each cautious form,
Turned backward to the driving storm,
Crowd fearfully Their guardians nigh
In folded cloak, close mantled lie;—
And nigh the dogs, still wont to share
The master's comforts as his care,
Beneath the well- known refuge creep,
Lull'd by the storm to transient sleep."

—MANT'S BRITISH MONTHS.

The ancient Romans commenced their year in March, and December was so called by them as being the tenth month. Our Anglo-Saxon forefathers gave it the name of *Christmonat*, or the month in which our Saviour Christ left his abode in heaven to visit our earth and sojourn among men.

We have now arrived at the closing month of the year, when all out-of-door operations, so far as the cultivation of the soil is concerned, have ceased. What a change do a few weeks bring over the scenes of nature and the pursuits of man! A short period since, all was bustle and activity on the farm, laborers were busy in the operations of harvest under the oppresive heats of a fervent sun; now all is still and silent, with winter's characteristic white mantle covering the face of natu e. Although in Canada we have frequently intervals of blue sky and clear sunshine in this month, so as to render Shakspeare's expression,

"The rain and wind beat dark December,"

less applicable to us than to the old country, yet the rapid shortening of the day, with not unfrequent snow-storms and biting frosts, the change is a decided advance towards the stagnation and apparent death of nature, towards universal gloom and desolation.

"No mark of vegetable life is seen,
No bird to bird repeats his tuneful cal,
Save the dark leaves of some rude evergreen,
Save the lone redbreast on the moss-grown wall."

Our Canadian winters are not privileged with the sweet chirping of the redbreast, a bird with which old country people have such pleasing associations from their earliest childhood. Our forests are painfully silent during winter, and their grave-like stillness is only broken by the noise of the woodsman's axe. Many of our most beautiful of the feathered tribe are now basking under warmer skies, and the wild quadrupeds and amphibious animals have retired to their winter quarters, which they are destined to occupy till the return of spring. Some of these become entirely torpid, laying up no store of provisions, such as frogs, lizards, bats, &c., which subsist on insects or vegetables. The roots of tender plants are protected by a thick layer of snow, which, from its non-conducting power, prevents the warmth of the ground from escaping, as otherwise it would do, into the cold surrounding atmosphere. The chief attention of the farmer is now devoted to the feeding and sheltering of his cattle, a matter rendered alike imperative by the dictates of humanity and the various considerations of sound economy. It is a well-ascertained fact, not so well known, or at least not so well attended to in practice as it might be, that all the domesticated animals thrive and fatten better, even on a less quantity of food, when kept in a state of uniform warmth

The primeval forest is now subject to the warfare of the chopper, who is the great pioneer of agriculture and civilization. The farmer finds now opportunity for collecting materials for fencing, firewood, and various matters of agricultural and domestic economy.

On the 21st of December happens the *winter* solstice, or the shortest day; and now old winter may be expected to assume all his characteristics, and govern with his icy sway. The social and inspiring festival of Christmas occurs very seasonably to cheer this cold, if not dreary season, for in Canada the weather is sometimes anything but dreary and depressing. And it is impossible to describe the buoyant feelings of delight with which one welcomes the first merry sound of the sleigh-bells, the infallible precursor of social visitings and merry-makings. In the old country, this season has been thus truthfully described:—

"Dreary would December be, did it not bring with it merry Christmas, with its holly, and ivy, and mistletoe, through the leaves of which peep the scarlet and purple, and dull white berries, giving a green and summer appearance to our rooms, and throwing a cheerfulness around our hearths. We see the laden coach rolling past our window, piled high with game, hares and pheasants, and great white geese, and black turkeys, whose plumage the wind blows back as they swing suspended from the roof; conjuring up visions of huge comfortable fires, well spread tables, and happy faces, all congregated to do honour to good old Christmas, whom Southey has beautifully drawn as seated beside the high-heaped hearth, in his great arm-chair, watching the children at their sports, or pausing at times to stir the huge fire, and every now and then sipping the bright brown ale."

For nights before this happy season arrives, we hear the village bells awakening the surrounding silence by their silver music, and throwing a cheerful sound over the wild wintry landscape. When the morning of that old and holy day arrives, we hear the rustic waits chanting some simple Christmas carol, as they stand in the grey moonlight, at the front of the picturesque parsonage house, telling them how Christ was on that day born, and that while shepherds were attending their flocks by night, the Angel of the Lord descended, and proclaimed tidings of peace and good-will to all mankind. How plaintive and tremulous do those old chants fall upon the ear, sinking noiselessly and peacefully into the heart, and filling the soul with a holy and reverential awe!

In our eye, Christmas never looks so beautiful as when it has been ushered in by snow and frost and rime; when the thatched roofs of the cottage are whitened over, and the branches of the trees are laden with feathery flakes; when the ivy that covers the grey and weather-beaten church-porch is half buried beneath the weight of accumulated snow, as if

> "Nature, in awe to Him,
> Had doffed her gaudy trim,
> With her great Master so to sympathise,
> Hiding her guilty front with innocent snow."

Such a scene, witnessed under one of those cold, clear, blue skies, which sometimes hangs over the earth in December, with the cottage chimneys sending up their columns of pale silver smoke, and a group of happy faces emerging from the ancient village church, sighing or smiling alternately as they recognise a child or a relation who has walked miles to bid them a merry Christmas,—or as they glance at the surrounding graves, and think of those who will never more sit at the high-piled table, over which the mistletoe-branch again hangs, as it did in the days of old."

A few words in reference to the misletoe, which is a parisitic shrub, attaching itself to the body of other trees, particularly the apple; when found on the oak, a circumstance which rarely occurs, it was held in peculiar reverence by the ancient Druids It is by no means a common plant, but may be found in considerable abundance in the extensive orchards of Herefordshire and Worcestershire, where, in severe winters, its branches are sometimes cut and given to sheep. This shrub, with a few others, such as the yew and the holly, have, from the remotest times, been associated with social and sacred feelings by the inhabitants of the British Islands. The custom which still survives of decking churches and private houses down to the smallest cottages with these characteristic evergreens at the holy festival of Christmas, is of very ancient date. The poet Gay remarks:—

> "When Rosemary and Bays, the poet's crown,
> Are bawl'd in frequent cries through all the town;
> Then judge the festival of Christmas near,—
> Christmas, the joyous period of the year!
> Now with bright Holly all the temples strow,
> With laurel green, and sacred Misletoe."

With reference to the same old customs, another poet has sung:—

> "On Christmas Eve, the bells were rung;
> On Christmas Eve, the Mass was sung;
> That only night in all the year
> Saw the stoled priest the chalice rear.
> The damsel donned her kirtle sheen;
> The hall was dressed with holly green;

Forth to the woods did merry men go,
To gather in the misseltoe.
Then opened wide the baron's hall
To vassal, tenant, serf, and all."

Christmas carols, candles, yule-logs, and other symbols of this joyous season have been evidently observed in Britain from the commencement of Christianity. The candles were formerly of immense size, and both houses and churches were illuminated with them ; indicating thereby *Him*, who is emphatically, "the light of the world." It is related of the buttery of St. John's College, Oxford, there is yet to be seen an "ancient candle socket of stone, ornamented with the figure of the *Holy Lamb*. It was formerly used to burn the Christmas candle in, on the high table, during the twelve nights of that festival."

For similar reasons they lighted the *Yule-log*, which, at this cold and gloomy season, not only afforded warmth and social comfort, but reminded them of the light and warmth of Christian truth and goodness. The log was usually as large as the wide, open, fire-places of our ancestors would admit of, and in many places it was the custom to allow servants ale as long as the log lasted;—what remained being carefully put away to light the Christmas fire of the succeeding year; a circumstance to which Herrick thus pleasantly refers:

"Come, bring with a noise,
My merrie, merrie boys,
The Christmas-log to the firing,
While my good dame, she
Bids ye all be free,
And drink to your heart's desiring.
With the last year's brand
Light the new block, and
And for good success in his spending,
On your psaltries play,
That sweet luck may
Come while the log is a teending.*"

It was also deemed requisite that the maidens who blew or lighted the Christmas-fire should perform the operation with clean hands.

"Wash your hands or else the fire
Will not tend to your desire ;
Unwashed hands, ye maidens, know
Dead the fire though ye blow."

"A custom (observes a modern author) no less general is the dressing-up of houses, particularly in the halls and kitchens, with branches of holly, ivy, bays, and rosemary. Nor must the misletoe be forgotten, for, whatever it may do in these refined days, it used to play a conspicuous part, less than a century ago, when it was regularly suspended both in hall and kitchen, that the young folks of whatever rank, might daily kiss and be kissed beneath its mystic branches."

In Yorkshire, and other parts of the north of England, many of the old customs still exist, but slightly changed by the stream of time. The good house-wife always presented a *cheese* at Christmas, specially preserved for the occasion, who, with great ceremony before she allowed it to be tasted took a sharp knife and scored upon it rude resemblances to the cross. To this were added the mighty wassail-bowl brimming with *Lambswool*, and furmity made of barley-meal, which last was also an essential of the breakfast table. In the cathedral town of Ripon the singing boys used on this day to "come into the church with basketfuls of red apples, with a sprig of rosemary stuck in each, which they present to all the congregation, and generally have a return made them of 2d., 4d., or 6d., according to the quality of the lady or gentleman."

And now our annual task is done. If anything we have said or culled in these hasty sketches of the months, has awakened, however feebly, a spirit of curiosity and kindly feeling, our object will have been gained. To our readers, one and all, we wish "a merrie Christmas and a happy New-Year !"

—*B.*

* *Teending*,—from the Anglo-Saxon, *Tendan*,—to set on fire.

Popular Errors.—It is astonishing to witness the degree of ignorance that prevails in the land upon the diseases of domestic animals, and the consequent barbarity that is too often practised upon them, with a view to alleviate their distresses. If we take for instance, what is termed "*horn ail*," or "hollow horn," we venture that more than nine-tenths of those who own neat cattle regard this as a disease, when in fact it is but a symptom of disease If the bases of the horn are cold, it is only an evidence that the animal is laboring under some disease which disturbs the natural circulation of the blood, and causes the extremities to be cold, and the remedy should be applied to the seat of the disease, and not resort to that cruel and almost universal practice of thrusting a gimblet into the horns and thereby mutilating that most delicately formed organ. Another practice, no less barbarous, and also the result of the ignorance which prevails of animal physiology, is that of splitting open for six inches in length, the lower extremity of a cow's tail, and, to complete the cruelty, cramming the incision with salt, to cure some *imaginary* disease, because that portion of the animal's tail is found for a space of three inches lacking of bone. This is the case with the tails of all animals of that class, whether in sickness or in health, and is only an evidence of the wisdom displayed by the Creator in so peculiarly adapting that instrument (the tail) to the purpose for which it was formed.—*Farmer's Journal.*

Horticulture.

HINTS TO THE PURCHASERS OF TREES, SEEDS, &c. BY J. BARRY, Nurseryman, Roches er N Y.

[*From the "Horticulturist," of June.*]

No pursuit or profession in life, however useful or honorable it may be, or however purifying and ennobling its tendencies, is wholly exempt from the evils of dishonesty. Not even the most sacred of all human vocations can escape the misfortune Will any one wonder, then, that there should be dishonest nurserymen and seedsmen, and dishonest dealers in trees, plants and flowers? Surely not A great deal has been said about the dishonesty of nurserymen, seedsmen, and florists; but if a rigid comparison were made between them and any other class of dealers, we care not which, we have not the slightest hesitation in saying that the results would show that no other branches of trade are, on the whole, conducted with greater honesty and firmness. It may be said that we are an interested party in the case, and therefore not competent to judge, but we take it upon us to say that we are. We believe we are as well acquainted with those who are engaged in horticultural commerce in the United States and have enjoyed as many and as favorable opportunities of studying their characters as most other men, and on the strength of this knowledge, we are willing to place them for honesty of purpose, for energetic and industrous habits, and the general usefulness of their lives, against any other class.

We have no desire to make invidious distinctions or comparisons, or to put one class or profession against another, but we would remind those who are ever prating about the tricks of nurserymen and seedsmen, that there may be as many short comings chargeable to their own calling. Who does not hear every day of his life about, false and short measures? Look at the imposition practised by the manufacturers of all sorts of cloths, by the substitution of one material for another, so that a person who is not thoroughly skilled in all their devices, is sure to be cheated. We have ourselves been sold cotton for woollen goods, by men who are so careful of their reputation that they would either knock down or institute a suit for slander against any one who would question their honesty. Look at the thousand deceptions of food and drink—in tea, coffee, sugar, wines and liquors of all sorts—and in tobacco. Indeed one can scarcely think of an article, whether of use or luxury, that can safely be bought from a stranger by an inexperienced person. The very *saints* of the world are engaged in the traffic in spurious commodities unblushingly. Yet these same hypocrites will cry out about the dishonesty of the poor nurserymen and seedsmen who happen by mistake or carelessness to sell one variety for another.

Let us not be understood as justifying the frauds or errors of nurserymen or seedsmen, far be it from us to do any such thing. We shall rather expose and condemn them. But it should be remembered that it is an easy matter for them to make mistakes, and exceedingly difficult to avoid them. They are handling a great number of varieties of the same article, and their sales being huddled into a few weeks, renders impossible that leisure and circumspection which can be given to ordinary trade. A boy entrusted to attach a label, may get it on the wrong tree or package, and the error may escape notice until too late. In packing, which must be entrusted to workmen, there are many chances for mistakes even when the most rigid surveillence is kept up. Indeed, throughout the whole routine of the business—in propagating, digging, cutting and packing—there are an almost infinite number of small operations which require exactness, and all of which expose to error. Be charitable, then, and do not call every error a trick or a cheat. Every year our professional nurserymen and seedsmen are becoming more systematic and more careful, as well as more discriminating and skilful, and thus the chances for error are rapidly decreasing, except among new beginners, who have everything to learn.

There is growing up, however, in this country, a system of dealing for which respectable nurserymen are not responsible, and to which it is our present purpose to call attention. The extraordinary growth of horticultural commerce within the two past years, has attracted the attention of that large class of speculating individuals who are ever on the look-out for a profitable field of operation—men who are peddling gravestones to day, lightning-rods to-morrow, patent medicines the next day, and so on from one thing to another. The country is filled with dealers in trees and plants. Beyond a doubt many of them are honest and honorable—men who may fairly be trusted; but it is equally true that very many of them lack honesty, and will not hesitate to misrepresent and deceive wherever they consider deception necessary to success. We have in our hands the most ample evidence of this. Letter upon letter has been for some time past addressed to us upon this subject from all parts of the country, begging us to expose the frauds, and propose some remedy. But what can we do? The world is full of credulous people, ever ready to be made victims to the crafty stories of unscruplous rogues, people who read but little, and whom our warnings will never reach, and who, even if they did would give them no heed,—people whom even dear bought experience would fail to teach wisdom. They are the penny wise and pound foolish, and will run a thousand risks of being cheated for a single chance of making a good bargain. The authorities of New York city caused flaming placards to be carried

around the streets, in the most conspicuous manner to caution country people against being decoyed into mock auction rooms, where they are certain to be fleeced by a set of stool pigeons; but while these placards are carried up and down all day long, every morning brings to light some mock auction frauds, and thousands are daily perpetrated that are never made public All that can be urged against the folly and madness of swallowing patent medicines avails nothing; for as we see the country full of travelling medicine chests and vast fortunes realized from the business. All manner of frauds are perpetrated, day after day, and year after year, upon a credulous public, and yet the last reaps as rich a harvest as the first. We have therefore but little hope that any thing can be done to stay deceptive trading in trees plants, or seeds. Our correspondent "M" of Maumee, Ohio, related, in our last number, some of the tricks of foreign adventurers in the West, and we have seen the very same things in this enlightened horticultural city of ours (Rochester) a few years ago. Large quantities of the merest trash were sold at exhorbitant prices to persons who were never known to patronize respectable nurserymen and florists at their own doors to the amount of a dollar. A short time ago a gentleman from one of the Eastern States called on us, and inquired for a person who, he said, had sold large quantities of Apple trees in his neighborhood, representing himself to be the proprietor of one of the oldest and most extensive nurseries in Western New York, and representing also that his trees were propagated by some superior method which was known to him only, and which gave them a decided superiority over trees grown in the ordinary way. On inquiring, we found this man did not own a single foot of land, had never been a nursery man nor had he any interest whatever in any nursery establishment, had bought such trees as he could make the largest profit on. He was a crafty rogue, however, pretended more then ordinary piety, and victimized the religious people of New England handsomely. A few weeks ago a nurseryman of Rochester received intelligence that he was represented in some parts of Ohio by a person who claimed to be his agent and *son*, while he not only did not know such a person, but had never seen him or heard of him before, and he was compelled to incur the trouble and expense of advertising him as an imposter. Is not this a high-handed piece of deception to be attempted in such a business, and among an intelligent people? The man who will do such a thing is not a particle better than he who counterfeits a bank bill or a silver dollar, or who will forge a signature to a bank check. We have it from perfectly reliable authority, that a company of tree dealers hailing from Ohio, purchased at a small nursery in Western New York, a quantity of seedling unworked fruit trees, [Peaches and cherries] knowing them to be such—for the nurseryman we believe to be a perfectly honest man—and they took them up, tied them in parcels, and attached labels to them bearing the names of all the best fruits in the catalogue. We were informed that these spurious articles were to be carried to Tenessee. There is a piece of villainy for you! Such men richly deserve the penitentiary, and we cannot understand how any honest man could conscientiously refrain from exposing them, and thus aid in bringing them to punishment.

In every part of the country people have been outrageously deceived by itinerant *grafters*. They traverse the country, and take orders to do grafting at so much apiece for all that live. When the season of grafting comes, a few workmen come along with a wagon-load of scions, containing every variety that could possibly be called for, all procured from the most responsible source; and as a proof of this, a catalogue of some well known nurseryman is exhibited, and it may be, a forged bill or invoice, while the scions were most likely cut from some of the orchards they had been grafting in. Thousands of orchards have been ruined in this way. We have now one in our possession which the previous owner had had grafted by one of these rogues, and insisted on having some three or four select sorts as he ordered he had a collection of vile rubbish, mostly natural fruit, and in some cases, three or four different sorts on a tree.

We might go on and cite cases of this sort which have come to our knowledge enough to fill a dozen pages of this journal, but it would be a waste of time and paper. In this part of the country people, are more cautious and careful than formerly, and few men now are willing to trust unknown irresponsible persons with the important duty of grafting their fruit trees. Not so, however in some parts of the West and South, where we are informed the speculation is in full blast. We hope this word of warning may find its way there, and prevent at least a few from allowing themselves to be victimized. It is but just to say, in this connection, that there are honest men engaged in the business of grafting—men in all respects worthy of confidence, and the service they render to fruit culture is very great. What we have said will be no detriment to them, for they have characters to sustain them and inspire confidence.

Quite as bad as any of the frauds we have mentioned, is that of palming off indifferent and worthless varieties of fruits and flowers, as something new, extraordinary, and valuable, at the most exorbitant prices. Crafty fellows perambulate the country with exaggerated colored drawings and bombastic descriptions, and thus deceive thousands of people.

The common Alpine strawberry has been peddled for years with the word *Mammoth* [very captivating] prefixed. The *Chater Oak* Grape—a great fox Grape, utterly worthless, except, as Mr Longworth says, that it might serve for cannon balls if lead were scarce—for two or three years has had a fine run in almost every part of the country, at three or five dollars per plant. The "*Excelsior*," and several others puffed and paraded about, are no better.

Strange to say, very many of those who purchase such articles, would not be persuaded to purchase those of real merit. Nothing else will serve them but to be *humbugged*, to use a vulgar but expressive term.

Newspapers lend themselves unwillingly, as a general thing, to these frauds, and do a great deal of harm. The family newspaper is looked up to as authority; and when these speculators get their glowing descriptions published, their work of deception is half accomplished.

The only thing that can remedy this evil is the dissemination of intelligence; and we call upon the friends of horticulture and of honest and honorable dealing, in all parts of the country to lend their aid in exposing and arresting this system of fraud. It is a disgrace to the trade and to the morals of the country. A most unpleasant duty it is for us to give such a subject this importance; but we cannot shrink from it. Paris is not the only place where such dishonesty is practised, the same game is played on a smaller or larger scale all over Europe, as the pages of their journals prove.

If there be anything about which people should exercise extraordinary care and caution in purchasing, it is that of trees seeds, and plants. What a loss of time and money, and what a disappointment and mortification, to be deceived in these matters! It is not difficult to avoid impostors, if we but determine on so doing. There are honest tradesmen enough everywhere, from whom a supply can be obtained,—men who have a character at stake and who feel that their success depends upon their good reputation. These harpies who go about the country deceiving are here to-day and there to-morrow, they seek patronage but *once*.

Our advise to all parties who desire to purchase trees, seeds, plants, or flowers—anything pertaining to horticulture in which frauds are or can be committed, is to place their orders in the hands of men whom they *know* to be trustworthy. Reliable tradesmen are well known, and those of them who have travelling agents, provide them, or should provide them with the requisite testimonials with which they may give the fullest satisfaction to those whose patronage they solicit. On this head a rigid inquiry should be made. No statement should be listened to that appears anywise suspicious.

Our reason for giving the above well written article a space in our columns is because the same deceptive game has been practised for years in our vicinity and all over the Province by persons of the very same character as described by Mr. Barry's able pen. Thousands of dollars are every year extorted from our credulous good country people in Canada by Yankee Peddlers ransacking both Provinces in all directions and pretending to be appointed agents for some respectable neighboring establishments, with no other intention but to deceive those who place confidence in their enticing stories, such as the promise to make up all losses caused by unfavorable seasons, &c., but never showing their faces again in the same locality. The neighborhoods of Collingwood and Owen Sound in particular have of late been a large field for their skilful manœuvres and we are assured by good authority that it is really shameful to see the way they have used the public, selling them trees that were dead before planted.

We would therefore earnestly recommend our readers to apply at some respectable nursery, such as Mr G. Leslie's to whose advertisement we would refer them, whose long experience and extensive connection may with safety be relied upon as a guard against deceit. Moreover he keeps Agents in most parts of the Province to take up orders for his establishment, thus to facilitate to purchasers the transacting of business with him. As the conveyances by steam to all parts of the Provinces are now so easy, parties in want of Nursery Productions would do best to apply direct, to secure their trees in good order, and without delay.

Communications.

UNBURNT BRICK FOR BUILDING.

The following communication was received in answer to enquiries in the February Number but got mislaid, and was not discovered until a few weeks since. It may be interesting to some of our readers and we therefore publish it, even at this late period:—

WESTWOOD, Sarnia, C.W.,
June, 25, 1855.

SIR,—Your querist (in your February number) Mr. Knowlson, asking for information as to the manufacture of unburnt brick, is, I perceive, not yet answered.

Having been a settler in this country when my nearest white neighbour was twenty miles distant, I have, in former years, been compelled to try my hand at almost every trade, this one in question, among the rest; and th o

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have more confidence in a professional man, my experience, such as it is, is at his service.

Presuming, therefore, that the plan I propose I have personally tried and found to answer, I begin. In the first place, as to grinding and preparing the clay,—for which purpose a pug-mill, made of a hollow button-wood log, or, in the absence of this stout plank will be found speediest and most effectual. For the admixture of hay or straw, I found the longest and finest the best; I used red top; prairie-grass might be still better. As to size, this of course must be a matter of taste; those I made were 18 inches, by 9 inches and 6 inches thick, and, when dry, were heavy enough to lift with comfort. To mix the hay with the clay—Place your wheelbarrow under the mouth of the mill, and, as the clay runs into it, sprinkle in also the hay, from time to time, as you see fit, until it is full. It is then wheeled off to the yard, and the clay from it, with a spade, thrown into the mould and pressed down with the foot until the mould is full in every part; the superabundance is then struck off with a straight edge, and carefully lifting up the model (which has neither bottom nor top) a brick will be made, so that one in fifty will not be lost by fracture in drying, if the yard is kept well sanded. Plaster will adhere to a wall built of these as well as to any other material. Two men and a boy will make 100 of these bricks in a day, one man to feed the mill and wheel the barrow to the other, who moulds them.

To your querist, or any other of your readers who might be inclined to adopt this material for building, I would suggest, that, though this mode of using it is good and cheap, there is another, equally good and infinitely cheaper, as old, I believe, as the hills, called the Pisé mode. It has also this advantage over the other, that any earth almost will answer for the purpose that is not pure sand or vegetable matter. The plan consists in ramming the earth between two boards, properly secured and adjusted on the wall, which, when filled, admits of being removed and adjusted again at pleasure. To descend to particulars would, I fear, occupy too much of your time. while it is also unnecessary, inasmuch as the whole process, describing soil, tools, &c., are fully set forth in *Rees's Encyclopædia* in the clearest manner. I may, however, state, that I am now residing in a house built on this plan, a story and a half high, and 35 by 26, which answers admirably. The walls, 18 inches thick, were carried 9 feet high in a week, being the short days in November, by three men, though the material had to be carted from some distance. It is indispensible that the foundation be kept dry; but with a stone wall, 8 inches or a foot above the surface of the ground, it would last as long as the foundation itself, with or without plaster, and granite would do no more. There can be no doubt but that this is the quickest and cheapest mode of building, and well adapted for all rural dwellings, root and ice-houses, garden walls, &c. In the case of open walls, the top would have to be covered by boards or clap-boards projecting two or three inches over them.

To go from building to ploughing. I have been shown a plough, by a neighbour lately from England, for ploughing in a sod, which, I think, worth notice. It consists in skinning the top to the depth of two or three inches, and, by shifting the clevis, and following again in the same furrow, throws five or six inches more of the sub-soil on the top of it. As soon as the first furrow is opened, the thin sod falls completely upside down into the bottom of it, and is, on the return of the plough, as effectually buried as could be done with the spade. Several lands might be kept going at once, so as to shift the clevis as seldom as possible, though the most obvious method would be to have two teams. In ploughing a single furrow, especially on a red top sod, the grass not only springs up between the furrows, but through them, and a hoeing crop is quite out of the question. On the double furrow plan I here propose, you will never see a green blade of the sod again, and can cultivate potatoes, corn, or other heavy crops to advantage. No doubt the method is known to, and practised by, many, yet, as I have never seen it mentioned in your paper, it is also possible that it may never have occurred to several of your readers.

With sincere good wishes for the prosperity of your paper

I am,

Sir,

Your obedient servant,

JOHN H. JONES.

Our Correspondent will see in the excellent address of Mr. Christie, Pres. Pro. Association, at Cobourg, a plan recommended very simlar to his, but more economical. It is to use the Michigan Double Mould Plough.

PATENTS FOR INVENTIONS IN ENGLAND.

We have been favoured with the following copy of a letter lately received by one of our correspondents, from the Chief Clerk of the English Patent Office. The information may be useful to many of our readers:—

"Southampton Buildings,
London, 13th *August*, 1855.

Sir,—The Lord Chancellor has transmitted to me your letter of the 30th ultimo, addressed to him on the subject of Patents for Inventions.

In answer to your first question I beg to inform you that copies of drawings accompanying specifications required by the public are made out of the office by draughtsmen employed by me, and are examined and duly certified by a clerk in the office; however, such copies are rarely asked for, and for this reason: Every specification filed under the Act of 1852, is printed, published, and sold at the cost price, within three weeks of its deposit in the office.

The specifications enrolled previous to the Act of 1852, fourteen thousand in number, are also in course of publication in subjects; and it is expected the whole fourteen thousand will be finished within six years from this time.

In answer to your second question: There is no such office as Examiner of Patents in England, nor is there the most remote chance of any such officer being appointed. It would be worse than useless. The indexing, printing, and publication of the specifications according to subjects, affording the person applying for the patent, full and sufficient means of reading, examining, and understanding all that has been previously done upon his particular subject. If he does not choose to read and understand, he simply wastes £25 upon a useless and valueless patent: others interested will read and understand, if he does not; and no one is injured by his folly except himself. This is undoubtedly the only true examination. An official examination to be of any service whatever, would require an officer for each particular subject: an engineer for steam-engines, for who else could touch such a subject; a gunsmith for fire-arms; and so on.

The system of official examination, lately got up in the United States, is, I understand, found to be both useless and obstructive. The arrear is very large, and is daily increasing; and there can be no doubt that official examination will be very shortly abolished; and that the English plan of publication, leaving each inventor to examine for himself, must be adopted.

The Commissioners of Patents have given copies of all their publications, indexes, specifications, reports, rules, &c., to the public libraries of all the principal towns in the United Kingdom; and they propose very shortly to send the same to each of Her Majesty's principal Colonies, to be placed in the Public Library of the principal towns of the Colony.

I have the honour to remain, Sir,
Your most obedient servant,

L. EDMUNDS,
Clerk of the Patents.

Alex. Kirkwood, Esq."

AN AMIABLE GOBBLER.

(To the Editor of the Agriculturist.)

Sir,—The following trait of paternal solicitude may, perhaps, merit a corner in your journal, affording, as it does, a somewhat curious freak in natural history:—

My neighbourhood is much infested by vermin, such as kites, polecats, &c., and the rearing of poultry is attended with many hazards and losses. To afford some better chance of escape to the turkey department, the eggs were placed under some motherly Dorking, and the wandering turkey hens were left to their own pursuits. The old gobbler kept a close eye upon these proceedings, and, as turkey chicks came forth, strenuously claimed them as his own. He took no notice whatever of common poultry, but would bear no refusal from his own tribe, and eventually secured nine turkey chickens, over whose growth and welfare he has watched with a tender mother's care,—nestling them at night under his wings, and anxiously guarding them from all danger during the day. It is perhaps not a very generous return, to add, that his young family are now in the highest perfection making their appearance from time to time upon our family board.

Yours truly,

Adam Ferguson.

Woodhill, Nov. 8, 1855.

Sausage Meat is best preserved in cotton bags a foot long and two or three inches in diameter, which, after filling, are dipped in and coated with melted lard. When used, the bag is sliced off with the meat, as it is much easier to make new ones than to preserve the old.

Scientific.

AN IMPORTANT DISCOVERY.

The scientific correspondent of a Montreal journal (probably one of the officials at the Paris exhibition), gives a very interesting account of a new process for obtaining steel from iron ore, discovered by a French chemist. We have no doubt the subject will be interesting to the scientific, and instructive to the general reader.—

Among the curious scientific inventions which are brought forward at the Exposition the metallurgical processes of Adrian Chenot are entitled to a prominent place. The art of extracting metals from their ores is one which is so intimately connected with chemistry that it might have naturally been expected to have kept pace with the great progress of that science during the last century. Such however, has not been the case; and the processes which are to-day employed in melting the iron ores of Elba and the tin ores of Cornwall are essentially the same as those employed twenty centuries since by the Romans who then employed the same mines, the conquerors of the world and before them the Phœnician merchants, sought at the *Ultima Thule*, the same silvery metal, which now forms the stock in trade of their successors (of the Phœnicians, I mean, the Yankee tin peddlars'—We may even say that in metallurgy, as in many other arts we have lost the secret of those olden times so much so that to-day the blades of Damascus are only known in history and the temper of the swords of King Arthur and his gallant knights is attributed to fairy skill. Well Adrian Chenot, skilful chemist and accomplished metallurgist at the same time, felt the reproach that all these facts cast upon modern science, and set himself at work with that enthusiasm and self-denial which alone accomplishes great things, to remove this reproach and to endow his art with those rich advantages which his favorite science had already conferred upon so many of the other arts of life. He saw in the commencement that there were two great points to be kept in view—excellence and cheapness. In these days of cent per cent, the servant who neglects to sacrifice to mammon, may win the favor of Olympus but not of the Exchange, and he learns not to overlook the all important question of economy. Now it is precisely in this respect that the art of metallurgy is the most behind hand. When the Romans wished a few tons of iron to mould swords and battle-axes, and to fashion their armour, they asked no questions as to expense, and since wood abounded, labour was of little account; their only problem was to obtain strong bright steel, without regard to cost. But where our ancestors demanded a ton of steel or iron for their limited wants, we require a hundred, not only for our cuttlery but for our cannons and balls, for our engines and our iron roads; to say labour is high, wood is rare, and for coal we must sink expensive mines, and the eight tons of coal which are required to fit one ton of steel for the market, add immensely to the cost of the metal.

Chenot's first question was, then, the economy of fuel. The smelter of iron has not only to reduce the oxyde which constitutes the ores to the metallic state but to fuse the metal; to accomplish the first, a moderate red heat only is necessary, but the subsequent fusion of the metal requires a greatly increased temperature and a vast expenditure of fuel. Nor is this consumption of coal the only objection to the fusion: the iron takes up certain impurities from the coal, which make it more fusible, it is true, but which give it the brittleness that characterizes cast iron. To remove these foreign materials and to give the iron that softness and toughness which enables it to be wrought at the forge, and serves to distinguish iron from all other metals; another long prolonged fusion and a peculiar process is required to convert the cast metal into malleable iron and finally to give to their product the fineness, hardness, and elasticity which characterizes steel. The malleable iron must undergo a kind of operation in the furnace before it has realized that condition of highest excellence, which fits it for the cutler's art.

To produce at will malleable iron or steel directly from the ore, was then a great problem for the metallurgist; since he might hope by these means to reduce to one half or one third the amount of fuel and of labor; and Chenot soon found that, in attempting this, another most important economy was attained. In a word, the great heat requisite for the fusion of the metal, was no longer necessary, and it became possible to convert the crude ore into wrought iron and steel without ever once melting it. Such is the discovery which he now claims to have perfected, after twenty years of painful and ill-requiting labors, and which he now offers to the world.

I will endeavor, in a short space, to give you some idea of the nature of this process as I learned it from the inventor himself at his works at Clichy, where this worthy representative of the old alchemists—venerable, bearded, and enthusiastic as they—labors, though with the agencies and instruments of modern science, which in many respects more than realize the wildest ideas of those early savants. Modern chemistry has taught us the use of gases, of which the alchemists knew little or nothing. They looked upon them as immaterial essences or spirits which escaped their modes of research; and it is only within less than a century that we have learned to control these subtile powers and make them available to light our cities, inflate balloons, and serve a thousand other purposes of life. I indulge in this digression upon pneumatic chemistry, because it is solely by means of gases that Chenot obtains his surprising results. In the first place he makes use of gas as a source of heat. In his process the fuel is never brought in contact with the ore, which is enclosed in a huge upright case or crucible of fire-brick. It would be impossible to heat this great crucible in a uniform manner by any other fuel than gas, and here Chenot has made for the first time an economical application of a cheap and very combustible gas which has hitherto been known only in the laboratory of the chemist. When the air passes over a mass of ignited fuel, its oxygen combines with a portion of the coal, and is converted into a dense incombustible gas, known as carbonic acid, which is the ordinary product of combustion; but if this gas passes over an additional body of red hot coal it takes up as much more carbon as it held before, and and becomes combustible, burning with a pale blue flame, without smoke, such as may be seen playing upon the surface of an ignited mass of coke or anthracite. By a peculiar construction of the furnaces, which receive a limited supply of air, M. Chenot converts the whole of his fuel into this carbonic oxyde gas, which is conveyed by chimneys to the surface of the retort, and there being supplied with air, is burned for the purpose of heating to redness the

enc osed iron ore. So much for this novel and cheap mode of converting any kind of coal i to a gas which may be employed with advantage wherever heat and not light is the object, and which is doubtless destined to find many valuable applications in the arts

The ore of iron being now heated to redness in the crucible, is to be reduced to the metallic state and here a gas is again the reducing agent in place of the coal which is generally mixed with the ore, and serves at once as a combustible and de oxydizer. Hydrogen, coal gas, or almost any other combustible gas may be employed for this purpose, but after many experiments, Chenot has fixed upon carbonic oxyde gas which we have just described—as the most available It is important for this object that the gas be pure, and as that obtained from the furnace is mingled with the nitrogen of the atmosphere, another means, admirable for its ingenuity is made use of. In the first place, a portion of pure carobinic acid gas, is prepared, as by the makers of soda water with chalk and oil of vitriol. This gas is passed through a cylinder of ignited charcoal, and without change of volume is converted into the combustible carbonic oxyde, which is conveyed by a tube into the crucible of ignited iron ore, and at once reduces the metallic iron, while it is, in its turn, converted into a quantity of carbonic acid gas, having double the volume of the carbonic oxyde employed. This gas is drawn off, by a simple aparatus from a tube in the side of the crucible, and being again passed over the ignited charcoal we have twice as much carbonic oxyde as before, to be again conveyed into the crucible and to renew the process, each time doubling in volume, so that in a few minutes the little leaven has multiplied itself so much that only a small portion of the carbonic acid is required to act as a vehicle for the ignited coal which, in a small cylinder apart, is to perform the work of reducing the iron.

The crucible, which is some thirty feet in height, is charged from above with the ore in large masses. The operation when once commenced is constant. The ore slowly descending is gradually heated until it comes within the sphere of ignition, where it encounters the reducing gas, and thence continuing its downward course the metal, when cold, is removed from below without in any way deranging the operation. The action of the gas converts the ore throughout into a dull gray spongy mass of metallic iron, which is soft and may be readily cut with a knife or condensed by pressure. The iron thus obtained possesses many remarkable qualities, of which M. Chenot avails himself, in the working of other metals, but which need not be mentioned here; its inflammability is, however, remarkable, for the sponge kindles by a spark and burns like German tinder; it is for this reason necessary to cool the metal before removing it from the bottom of the crucible.

Having obtained the iron sponge, it is reduced to powder and subjected to pressure, when it consolidates in a coherent mass, copying exactly the forms of the mould. It is now only necessary to subject this condensed sponge, which has lost its inflammability, to a welding heat, in a forge, and the soiidification of the iron is completed with a slight shrinking of the mass, which is now pure malleable iron, capable of being forged or rolled into plate. I have seen in this way castings of soft iron of the most delicate patterns, and horse-shoes, both made from the same metallic sponge, moulded in the cold, and consolidated without fusion, while by the side were large consolidated ingots, fit to be wrought into bars or drawn into wire.

The next step is the conversion of this pure malleable iron into steel. This, you are aware, is generally effected by a prolonged heating of the iron with powdered charcoal, of which the metal absorbs a portion which changes its texture, and gives it the hardness and other precious qualities of steel. But Chenot was aware that if he could introduce the carbon in a liquid state into his metalic sponge the transformation could be more easily effected. and he moistens the spongy iron with oil before compressing it. Heat now being applied, the volatile portions are expelled, the carbon unites with the metal, and by a process similar to that which we have just described for malleable iron, a perfect steel is at once obtained. Hitherto in this important manufacture, much has been left to empiricism, and it was not easy to produce any variety of steel, but it is now found that by varying the quality of the oils, it is easy to produce a metal of any degree of hardness; the coarsest oils, or even tar may be used for steels of great hardness, while, for the finer varieties, the purest and most delicate oils are employed. Such is the outline of the processes of Adrian Chenot. His patent has just been purchased for England and France by some capitalists who are now constructing works in the vicinity of Paris, where, taking advantage of the furnace already erected by the inventor. They are about to commence the manufacture of iron and steel on a large scale. It is said that the consumption of fuel required for the production of malleable iron from the ore, is equal to only about one-tenth of that required by the old method, while the length of the process and the amount of labour is very much abridged. Another time I may describe to you the curious alloys of iron with titrnium and with chronium obtained by Chenot, which promise to find important applications in the arts, for a new alloy is often in effect a new metal added to our previous list of available materials. The same thing may be said of his alloy of iron and aluminum, not to speak of the marvellous character of the pure aluminum of St. Clairdevile and of its alloy with copper, whose history I reserve for another occasion.

Chenot has a curious collection of his products in the exposition, where they will not fail to attract the attention of those charged with the examination of minerals and metallurgical processes. This Jury, of which M. Elie de Beaumont is President, is composed besides of Dufrenoy, Le Play, Callon and Chaucourtois, of the Imperial School of Mines. W. J. Hamilton, President of the Geological Society of London, and Warrington Smyth of the British School of Mines, with Jevaix, Inspector General of the Mines of Belgium, Oversveg of Prussia and Tunner of Austria, Director of the School of Mines of Leopen, to which, as supplementary jurors, have been added Kittinger, Inspector-General of Mines from Austria, Hunt, of the Geological Survey of Canada, and Rainbeaux of Belgium.

ALUMINUM.

Quite an excitement has taken place among the chemists of France in consequence of a discovery made by Saint Claire Deville, by which he has been enabled to extract the metallic principles of clay, known by the name of aluminum. Although enough had been known from the researches of Sir Humphry Davy, years ago, that there was a metal in clay, or in other words that common clay in its purity, was a compound made up of a distinct metallic substance and other matters united with it, this metal has never been obtained in sufficient quantities to enable one to ascertain all its peculiar characters.

This has at length been done, and it has been found to possess valuable properties.

It may seem very curious to many, that our common clay banks contain a valuable metal of peculiar characteristics, which, if separated, could be used instead of gold or platina, in many of the arts. The brick-maker as he tempers the mortar for his bricks, or the potter as he moulds a jug, would be surprised to see the chemist extract from that brick, or jug, a bright shining hard and durable metal; and yet it can now be done. The following is an account given of some of the properties of this metal, called as we before said, aluminum.

"As aluminum is nine times lighter than platina, and presents also a surface nine times more extended than the latter metal with an equal thickness, its substitution for platina should be productive of real advantage, above all, that its price has become very accessible. The aluminum here spoken of is very difficult to forge. In order to roll it, it has been found necessary to anneal it at each pass. By depositing copper electro chemically on a plate of aluminum, they have succeeded by the aid of rollers in reducing it to very thin plates. Hard aluminum acquires by annealing an inflexibility which would make it of use in the suspension of all kinds of scales for assays or analysis. This metal is so light that, the weights of the system being the same, the arms of the beam can be elongated a great deal, and long blades can be placed even at the extreme points of suspension, as on the center of oscillation. The author does not doubt that in weighing 20 grammes, the sensibility of the balance would not raise a half millionth."

Miscellaneous.

CRUELTY TO ANIMALS.

"I would not enter on my list of friends,
(Though graced with polished manners and fine sense,
Yet wanting sensibility,) the man
Who needlessly sets *foot* upon a worm"—*Cowper.*

(*Correspondence of the New England Farmer.*)

He who knowingly would injure the harmless creatures God has made, can have little feeling for human kind. Injury to creatures may sometimes be done by accident, or through necessity. Such acts "incur no blame." But he, who, for the sake of gratifying his own passions, cruelly treat those animals God has placed here for the benefit and service of man, is justly deserving no claims to humanity. It is not the man who beats with a goad his ox or his horse, that may be called the most cruel or unmerciful; for he who neglects to provide for the comfort and health of his dumb creatures is equally censurable. But in most cases it is pretty true that he who is guilty of the one act, is equally guilty of the other. I have reason to believe, however, that a greater degree of kindness is shown towards dumb animals now, than formerly—that less beating and bruising is resorted to in the training of young horses or oxen; yet there are many who still adhere to former customs, although late discoveries and observations prove that gentle means and mild measures may be more *satisfactorily* used towards subduing the brute creation. The "whip for the horse" will be but frequently used if the hand that plies it is associated with a kind and feeling heart. However great a reformation *has* been made in the mode of training animals to service, too harsh measures are still used.

The horse, the most noble of all animals used by man, is the most cruelly treated. Even in the present state of civilization, I presume not one horse in five is treated in such a manner as that he lives out the term of his natural life. My opinion is, that if this animal were properly cared for, and kindly treated, he would be in as fit a condition to labor, at the age of twenty, as he now is, with present treatment, at twelve. Very few horses at the present day ever arrive at the latter age in good condition, with soundness in body and limb. Hard labor and improper care render him unfit for service at an early age. The constitution of the horse is very similar to the constitution of man, hence, the former is no more fitted to bear excessive labor and unkind treatment, than the latter. It is as injurious to the constitution of the horse to keep him at labor in stormy weather, as it is injurious to man; hence it is as necessary for a teamster (if he would provide for the health and comfort of his team,) to use the same care for them, that he does for himself.

There is one cruel act of which too many are guilty, and about which I cannot forbear speaking. I have reference to the practice of putting off horses which have become unfit for service, in consequence of old age, to cruel and inhuman persons. Although horses thus put off have served their masters faithfully, and doubly paid, perhaps, for all they have received, yet still, for the sake of a few paltry dollars, they are sold to those who will cruelly treat them to the last moments of their existence. It appears to me that the man who will *thus* part with his horse, is as virtually cruel, as he who abuses him after he has him in his possession. Is it not more an act of mercy to take the life outright, of a worn-out beast than to dispose of him to an individual who will kill by degrees?

I have never been the owner of but one horse, and although he is considerably on the down hill of life, money would not tempt me to part with him, unless I felt sure he was going into the hands of a merciful man. I have respect for the aged; and verily kindness is actually due those animals whose services are so beneficial to mankind.

Who would see an aged father or mother (whose lives had been spent for their children turned off with hard usage and unkind treatment, because the infirmities of age had rendered them unfit for service? Of course the kinder treatment is their due, in consideration of what they have been, and what they have done.

Cruelty to animals, is a subject deserving especial attention. Parents ought to make it a point of duty to train their children to be merciful to animals, as well as to human kind. If this were more generally done, certain it is there would not be so many unfeeling and cruel men. The boy who is suffered to grow up with the privilege of inflicting pain upon every animal that comes in his way, is pretty sure to be a cruel and hard master, over whom and whatever he has the control.

"Mercy to him that shows it is the rule
And righteous limitation of its act,
By which heaven moves in pard'ning guilty man;
And he that shows none, being ripe in years,
And conscious of the outrage he commits,
Shall seek it and not find it in his turn."

It is supposed that water containing phosphates and other earthy matters is apt to induce, *in the systems of predisposed horses*, an *ossific diathesis* resulting in boney enlargements.

Editorial Notices.

DEATH OF WILLIAM MATTHIE, ESQ.

It is with feelings of deep regret that we record the decease of this excellent man, who departed this life at his residence, in Brockville, on the 9th November, 1855. Notwithstanding that Mr. Matthie had been for several years in a state of feeble health, he was enabled, in consequence of his aptitude for business and great decision of character, to conduct successfully a large commercial establishment, of which he was the head; while he continued to evince an unabated interest in whatever promised to promote the interest of his locality or the welfare of the country. From his well-known patriotic spirit and liberal views and feelings, Mr. Matthie (although never, we believe, practically engaged in farming) was chosen President of the Agricultural Association of Upper Canada in 1853. Ill health, at that time, prevented him doing all that he desired, but his munificent donation to the funds of the Association, during his period of office, will be long and gratefully remembered. The writer of this short and very inadequate notice, had abundant means of knowing the deep and abiding interest which Mr. Matthie felt in the welfare of the Association; and during the recent exhibition at Cobourg, he received from the deceased a telegraphic message stating that he was too ill to attend, but felt desirous of knowing whether the show was progressing satisfactorily.

The removal of such a man in the prime of life is an irreparable loss to his family, his friends, and his country. His example, however, will continue to live; and it is one peculiarly calculated to animate and guide the young. The following facts and remarks, taken from the *Brockville Recorder*, will interest not a few of our readers:—

Mr. Matthie was a native of Alloa, Scotland. He came to this country, while yet a boy, with his father, who settled near Lanark, in the Bathurst district. In 1827, Mr. Matthie, then a lad of only 15 years of age, came to Brockville, a friendless stranger, to push his way in the world. He commenced his active career as a clerk in one of our mercantile establishments. In that capacity he continued, giving the greatest satisfaction to his employers, until the year 1835, when, with no capital except his character for inflexible integrity, he embarked in business on his own account; and since that time he has been widely known as one of the most enterprising and honourable merchants in Canada. Like most men in business, he had, at times, great difficulties to contend with, but his indomitable energy of character carried him through them all, and his reward was a handsome competency, which, however, in the inscrutable dealings of the Almighty, he was not long permitted to enjoy.

In the death of Mr. Matthie this community has sustained a loss well nigh irreparable. In every project for the improvement of the town and surrounding country he took the lead, and there was no charity to which he was not the first contributor. In times of difficulty, when almost daily appealed to by business men and others for advice, he would cheer them on by recounting his own experience in life, and enjoining on them frugality, diligence, and self-reliance. Fervid and unwavering in his attachments, his friends found no limit in his exertions to serve them, and nothing appeared to gratify him more than to aid the deserving poor, in whose welfare he always manifested a warm solicitude, and by whom the loss of his counsel and its elevating influence will be severely felt.

In politics, Mr. Matthie was a reformer, and his purse and person were ever ready, when required, in forwarding the interests of the Reform party, of which he was an energetic and talented member. In every leading question of the day, Mr. Matthie took a warm interest, and the late ministry were frequently under obligations to him for advice in relation to commercial matters.

In the agricultural progress of the country, the deceased always took an active interest; an interest which continued unabated till the day of his death, and was strongly evinced in a conversation he had with the editor of the *Recorder* the last time the writer ever saw him alive.

No man can pass through the scenes of an active life faultless, yet we believe whatever faults Mr. Matthie possessed will speedily be forgotten, while his virtues will live embalmed in the hearts of the many friends he has left behind him, so long as the lamp of their lives holds on to burn. Peace be to his ashes. Take him all in all, we may not look upon his like again.

Mr. Matthie was in the forty-fourth year of his age. He has left a wife and four children to mourn the loss of an affectionate husband and a kind and tender father.

His funeral took place on Monday afternoon; the procession of carriages was the largest we ever saw in Brockville, and, while the funeral procession passed through the town, every store was closed.

THE POTATO ROT.

The rot this year is very general in this part of Canada, and threatens to ruin a large portion of the crop. The old varieties are the most affected. The Pinkeyes are almost a total failure except on dry soils, and in most places they are very small. Judging from what we hear the crop in the townships near this city will be two-thirds less than an average. This will tend to keep up the price of flour, and provisions generally. We may remark, as a point of

some interest to potato growers, that of some thirty varieties of seedlings grown by the writer, six miles north of Toronto, not a single rotten potato has been detected. The soil was the same, in quality and position, as an adjoining patch of Cups, which have rotted badly. So far as we can judge from one year's cultivation, and the test of the table, we have obtained six or seven varieties of great promise. Another season we may have specimens of these for distribution.

CANADIAN SETTLER'S GUIDE.

By Mrs. C. P. Traill. 1855.

We noticed this useful work as it issued from the press in Parts. Our attention has been again drawn to it, by its appearance in the shape of a very neat book of some 260 pages. The authoress is a sister of the well-known writer, Agnes Strickland, and has experienced in her own person all the trials, hardships, and difficulties of the "settler's" life. Her book is intended especially for Immigrant's wives and daughter's, but may be read with profit by all newcomers to this country. Though Mrs. Traill is not unknown to fame as a writer of pleasant tales and other more ambitious productions, she has nevertheless succeeded in compiling an amount of practical information, suited to the every day wants of the immigrant settler, that is not to be found in any other single work with which we are acquaintd. The appendix contains numerous tables of great value such as routes, distances, and rates of passage from Quebec, to all parts of the Province and Western States; money tables, showing the equivalent values of sterling, currency, and federal money, or dollars and cents; rates of wages; value of live stock, &c,. at different periods; legal weights, of produce; information in regard to land, census, returns, &c, &c. We do not know a more useful book relating to Canada which a person here would transmit to his friends "at home" who may contemplate emigrating. It can be sent by post, and costs only $1. The work is published at the office of the *Old Countryman*, Toronto.

Canada: Physical, Economical, and Social.—By A. Lillie, D. D. Toronto: Maclear & Co. 1855.

Accidental causes have prevented us giving this very valuable publication an earlier article. We learn from the preface that it was prepared for the Committee of the Paris Exhibition, and sent in to compete for the prizes offered by that body for such Essays or Reports on Canada as might be accepted. On the alleged ground, however, of the manuscript being difficult to make out, it was passed by unread; a circumstance much to be regretted as whatever proceeds from Dr. Lillie's pen on "*The growth and prospects of Canada*," as well as from the work in question, is justly entitled to a candid and respectful consideration. The author, however, has judged properly, we think, in publishing his essay on his own responsibility, thus affording the public an opportunity of forming a judgement on his performance; and it is much to be desired that the labor and example so patriotically bestowed in preparing and bringing out the work should not be allowed to pass unrequited. For notwithstanding the many excellencies of the successful essays, none of them appear to convey so complete a view of this extensive and prosperous Province as Dr. Lillie's report, which is admirably adapted to meet the various wants of the intelligent and enquiring stranger, who may be looking, or induced to look, to this portion of the British Empire, or the North American Continent, as his future home.

The work is neatly printed, consisting of 300 pages and a well executed map. It should be in the hands of every Canadian who is desirous of possessing full and complete information of the land in which he lives. Much good would result if our people would send copies of Dr. Lillie's publication to their friends in the Old Country; for besides the valuable information it contains, it would in other respects be an acceptable New Year's Gift. It can be procured in stiff paper cover, well suited for going through the post, at the low price of three quarters of a dollar.

TORONTO MARKETS.

Toronto, December 6, 1855.

Wheat, in poor supply, at 9s. 11d. to 10s. per bushel; Oats very plentifully supplied from the other side of the lake and from farmers—they sell at 2s. 8d. to 3s. per bushel; Barley, 5s. 8d.; Peas, 4s. 6d.; Potatoes, 4s. to 4s. 2d. per bushel; Hay, $18 to $30 per ton, and plenty. During the past eleven months there have been exported from Toronto, 621,322 bushels of Wheat; 146,820 barrels of Flour; and 23,035 bushels of Barley and Peas—in all equal to 1,378,457 bushels of grain. This immense quantity is the produce of the Counties of York, Ontario, and Peel, for, if a small portion came from Simcoe, a still larger quantity, the growth of the United Counties, has been exported from Port Credit, Whitby, &c. Over *two-and-a-half millions of dollars* have thus passed into the hands of the farmers of these counties during the present season for grain alone!

ENGLISH CATTLE
IMPORTED ON COMMISSION,

BY

Messrs. THOMAS BETTS & BROTHERS,

OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND, Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

MANY of the best breeders of Stock reside within a few miles of Messrs BETTS' residence, such as the celebrated breeder of South Down Sheep, and the gentleman who has taken the first prize the last two seasons at the Royal Agricultural Society, for the best entire Farm Horse; also several noblemen and gentlemen who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a professional agent in the purchase of stock, they being likely to know where and how to select the best cattle at the lowest price.

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

As soon as they are purchased, information by the first mail will be given, stating the price, and the time they will leave England for America: also the receipt from the owners of the Cattle.

To secure importers against losses that are liable to occur to cattle on seabord, Messrs. Betts beg to inform gentlemen they can be insured when desired, against all accidents and disease, from the day of purchase in England till the day of delivery in America, on application to our agent.

Commission Charged.

Horse,	each,	$80
Bulls or Cows,	"	6
Ram or Ewe,	"	3
Three Sheep from the same owner,	each,	2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner,	each,	22
Ten " "	"	11

Expense of keep and attendance from the time of purchase up to the period of sailing from London or Liverpool, including Railway expenses, &c., as follows:

Horse,	each,	$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

Keep and attendance across the Atlantic on board the Steamer provision for 20 days.

Horse,	each,	$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels provision for 60 days

Horse,	each,	$75
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers of cattle into America, Geo. Vail, Esq., of Troy, and Col. Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate of charges, both gentleman deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased by charging five per cent. and travelling expenses. All other bills, such as fitting up of the Ship, provender, passage and attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in England, will be kept with our Agent,

JAMES M. MILLER,
81, *Maiden Lane, New-York City.*

Parties favouring Messrs. Betts with orders, will please make use of the following Table of Specification:

Breed.	Horse.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel	I insured.
Horse,						
Short-Horned,						
North Devons,						
Herefords,						
Ayrshire,						
Alderney,						
	Rams.	Ewes.				
South Down Sheep,						
Cotswolds,						
Leicester,						
	Boars.	Sows.				
Suffolk Swine,						
Essex do.						
Berkshire,						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows, South Down Sheep, Cotswold, Leicester, Hampshire South Down Sheep, selected and imported on commission to any part of America, by Messrs THOS. BETTS & Co., Liverpool and Herts, England. Circulars, containing the prices of all kinds of Stock, and the expenses to America, also giving the weight and quantity of wool of all kinds of Sheep, can be received by applying personally or by letter to our agent J. M. Miller, 81, Maiden Lane, New York city.

N.B.—A Model of a Patent which, for future will prevent all accidents occurring to Cattle, can be seen at 81, Maiden Lane, N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the best stock in England, such as should be imported to America, can be obtained at the following prices:

		$.	$.	$.	
Thorough Bred Horses, from	-	1 00 to	2 0	12 0	
Short Horn or Durham	Bull -	400 "	1500	700	
Do	Cows -	200 "	800	400	
Do	yearling Bull -	200 "	1 0	500	
Do	do Heifer -	175 "	4 0	250	
Herefords	Bull -	300 "	8 0	5 0	
Do	Cows -	200 "	6 0	250	
Devons	Bull -	300 "	800	4 0	
Do	Cows -	200 "	500	250	
Ayrshire	Bull -	15 "	3 0	3 0	
Do	Cows -	10 "	250	2 0	
Alderney	Bull -	15 "	225	175	
Do	Cows -	100 "	150	125	
			Will weigh when killed and dressed	Will shear of washed wool	
Cotswold Sheep	Ram -	100 to	3 0 13 lbs	125	12to15lbs
Do	Ewe -	25 "	100	30	
Leicester Sheep	Ram -	10 "	2 0 12 lbs	100	
Do	Ewe -	20 "	80	25	
South Down Sheep	Ram -	100 "	3 0	112lbs 125	6 to 9lbs
Do	Ewe -	25 "	100	30	
Hampshire do	Ram -	75 "	125 12 lbs	1 0	6to10lbs
Do	Ewe -	15 "	25	25	
Swine	Boars -	25 "	50	40	
Do	Sows -	15 "	40	25	
Merino Sheep from Spain					
Mules from Spain.					6

SUFFOLK PIGS,
(Directly from Imported Stock.)

THE Subscriber offers for sale, a few of these incomparable Pigs, singly, or in properly selected pairs.

PATRICK R. WRIGHT.

CASTLETON FARM,
Cobourg, C.W., July, 1855. 8—tf.

UNIVERSITY COLLEGE, TORONTO.

THE Lectures on the History, Science and Practice of Agriculture will commence early in November. Young men from the country, can attend during Winter, other classes, such as Chemistry Geology, Natural History, &c. for a very small outlay. Particulars may be obtained of Professor Buckland, Board of Agriculture.

Toronto, Sept. 25th, 1855.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is bereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office ; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particular before a certificate can be issued.

It is desirable, in order facilitate the taking of entries for the Provincial Exhibition at Cobourg in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND, *Secretary*

Office of the Board of Agriculture
Toronto, March, 1855.

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision.

A man and three boys can turn out from 5,000 to 10,000 feet of pipes per day, according to sizes ; and if worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - - - - - - - - - - - - - - - - - - - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - - 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma ; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,
Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturists and Horticulturists, that they have received a large and varied assortment of

FARM AND GARDEN IMPLEMENTS

And would solicit a call from parties about to purchase, at No. 77 corner of Yonge and Adelaide streets, Toronto They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand. Reaping and Mowing Machines on the most improved principles, will be for sale in their season

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second, Bred by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Puslinch, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds ; if grade, 50s.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (I 621 English Herd Book), was sold in 1853 for $4,000.

FREDERICK WM. STONE.

Guelph, April 24, 1855.

COMBINED REAPER AND MOWER.

Manny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught—the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground ; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $130. We are also manufacturing Burall's Reaper, price $120 ; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, May 6, 1855.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture, Horticulture, Farm Mechanics,* and to the advancement of the *Farmers' interests generally* It commences its Eigth Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

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Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributors to this journal.

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WM. McDOUGALL,
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